

The New York
Academy of Medicine



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SOUTHWESTERN MEDICINE

(REGISTERED U. S. PATENT OFFICE)

VOL. XX.

JANUARY, 1936

No. 1

OFFICIAL ORGAN
of the
NEW MEXICO MEDICAL SOCIETY
ARIZONA STATE MEDICAL ASSOCIATION
EL PASO COUNTY (TEXAS) MEDICAL SOCIETY
THE MEDICAL AND SURGICAL ASSOCIATION
OF THE SOUTHWEST

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Your Attention is called to an Important Matter

Successful desensitization of your Hayfever Patient depends upon correct interpretation of skin sensitization tests and the use of pollen antigen prepared for the individual patient. Preseasonal desensitization offers the best means of prevention.

PATHOLOGICAL LABORATORY

Suite 507 Professional Bldg., Phoenix, Arizona

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THE CANNING PROCEDURE

•Some misunderstandings exist as to the mechanics of the commercial canning procedures. Although some such information is available (1) (2), it is not surprising that the facts are not more generally known. The art of canning has been largely developed by, and retained within, the industry.

Of necessity, canning procedures vary with the product packed. However, it is possible to indicate in broad detail the treatment to which foods may be subjected during canning.

Cleansing Operations

Raw materials are given a thorough water cleansing, usually by washing under high pressure sprays.

Preparatory Operations

Following washing, undesirable stock is removed by sorting, trimming, peeling and coring operations, as occasion may demand. With some products these operations are performed mechanically.

Blanching

Certain products are "blanched" or scalded by immersion in hot water. This process does not only to clean the product further,

but also to soften the tissues and expel air therefrom.

Preheating and Filling Operations

Here practice varies with the product. Sometimes the food is precooked and filled into cans; again, it may be filled into cans and hot water or hot salt and/or sugar solutions added; still again, the filled cans are "exhausted" in a steam or hot water box. All these operations, the majority of which are mechanically performed, serve to pre-heat the product and exclude air from the cans.

Sealing, Processing and Cooling Operations

The filled cans are hermetically sealed on an automatic "closing" machine while the contents are still hot; the sealed cans are then heat processed to destroy spoilage micro-organisms; finally, the cans are cooled in water or air. Cooling contracts the contents and produces a vacuum within the can.

Such are the broad details of the canning procedure. We trust this brief word picture will bring better understanding of the treatments to which canned foods are subjected.

AMERICAN CAN COMPANY

230 Park Avenue, New York City

(1) 1924, Commercial Fruit and Vegetable Products, W. C. Gruess, McGraw Hill, New York

(2) 1924, A complete Course in Canning, The Canning Trade, Baltimore

This is the eighth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Committee on Foods of the American Medical Association.

NEW YORK ACADEMY
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Southwestern Medicine

PUBLISHED MONTHLY

VOL. XX.

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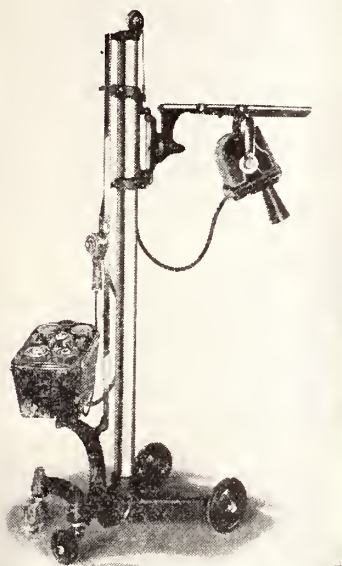


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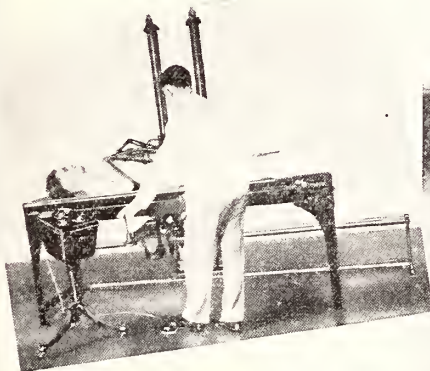
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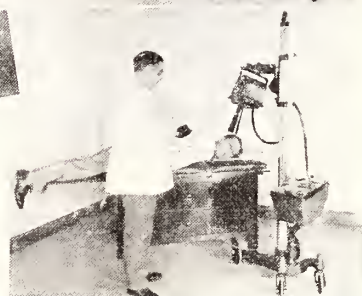
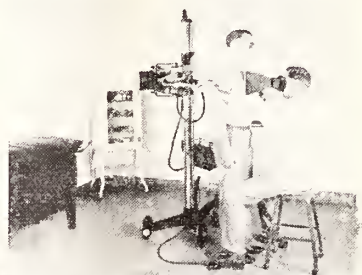
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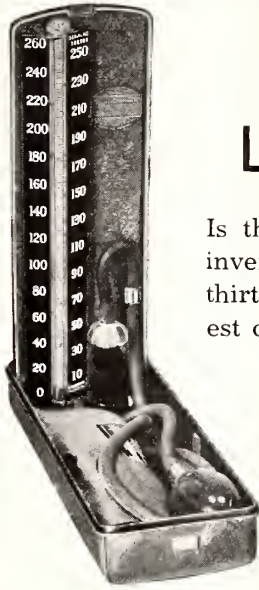
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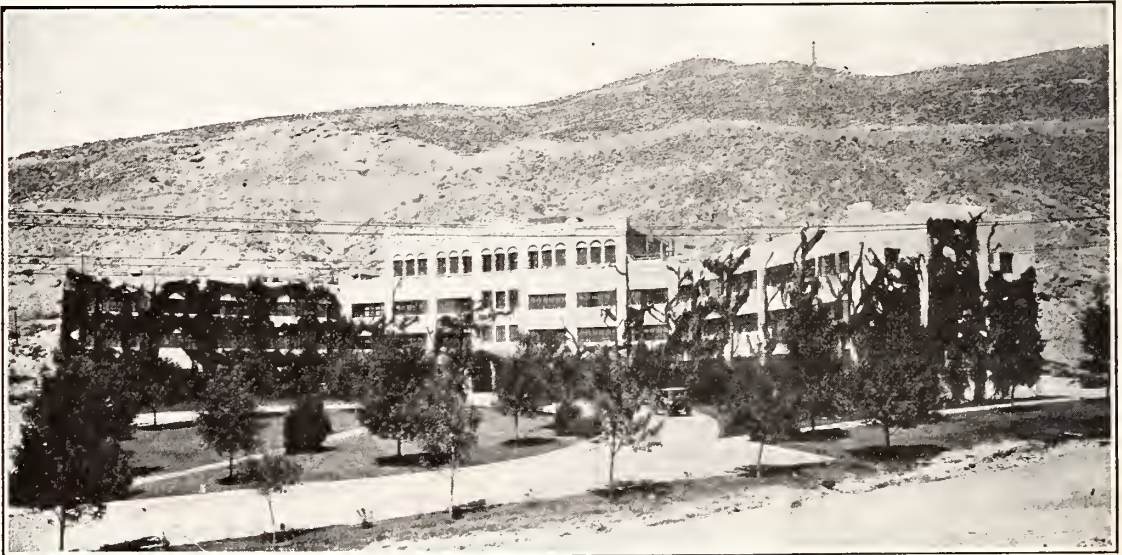


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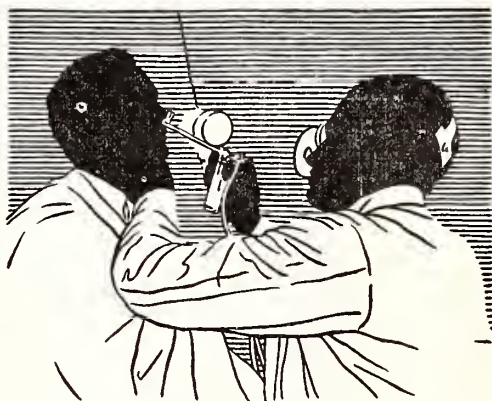
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VOL. XX.

JANUARY, 1936

No. 1

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HAY FEVER AND OTHER ALLERGIC CONDITIONS

ROBERT W. LAMSON,
Ph. D., M. D., F. A. C. P.,
Los Angeles, California

(Read at the Fifty-third Annual Session of the New Mexico State Medical Society, May 24, 1935.)

It is impossible to discuss so-called hay fever without comments about other allergic conditions. The first step must be to select a common "language," so that there shall be no confusion. The term allergy is a controversial one, not so much among allergists as in other fields of medicine. A negative definition is most timely. The term is **not** correctly employed to explain all peculiar medical problems. I use it in a clinical sense, to mean an unusual or changed reaction to substances, often protein, not injurious to normal subjects. These reactions are most typical in (a) the skin, (b) upper respiratory tract, (c) lower respiratory tract, and finally (d) in the gastro-intestinal tissues. Allergy is but one of the mechanisms initiating these patterns. The clinical types are: Eczema—especially in children, some cases of urticaria, vasomotor rhinitis, "asthma" and gastro-intestinal or abdominal allergy and occasionally migraine and dermatitis herpetiformis. Henoch's purpura and certain genito-urinary manifestations appear to be allergic in nature. The term atopy, used by many adherents to the Coca school, includes allergy as defined, and emphasizes the importance of heredity.

In differentiating allergic patterns from similar clinical manifestations no single criterion is pathognomonic, but as in many divisions of medicine, the history approaches the absolute yardstick. A few of its more important subdivisions must be considered. The importance which Coca attaches to heredity has been mentioned. Conservative studies indicate

that from 50 to 60 per cent of patients have positive antecedent family histories of allergy. More complete information undoubtedly will raise this to a much higher figure. If the allergic trait is in each paternal and maternal line, it is probable that an allergy may appear in an offspring; approximately 60 per cent develop it; onset is apt to be before the age of 17 years. If the positive family history is unilateral onset of allergy is later and a smaller proportion develop the condition.

When the family history is negative a still later onset is probable; although it rarely exceeds 70 years; some other types of asthma begin after this age. If one offspring is allergic approximately one-third of the offspring in this family develops some allergic condition.

The incidence in the general population, has been variously estimated from one to 10 per cent. No physical type seems to dominate; the allergy is distributed about equally between the two sexes.

The conditions are not related to economic, social or hygienic factors. While some have claimed that the pure-bred Indian escapes these conditions, the reservation physicians state that allergic conditions are present but have been overlooked. I know of no other race which might claim immunity. The allergic condition in the patient determines the value of skin tests. These are most apt to be positive in true hay fever, less so in asthma and least in urticaria. If the patients are typical examples of allergy, the positive tests average 60 per cent.

One with an allergic "constitution" may manifest it in more than one organ or tissue. Eczema in childhood may be a forerunner of hay fever and ultimately of asthma. Several conditions may exist at one time. In a group of 2,063 patients (Rackemann), 50 per cent of

adults with eczema had one or more additional allergies. Less than 30 per cent of asthmatics had another allergy, but in the hay fever group the percentage increased to 37 per cent. Urticaria is at the bottom of the list, with but 15 per cent showing other manifestations. This suggests the non-allergic nature of many cases of this condition.

The term vasomotor rhinitis is suggested as a substitute for "hay fever." It is explanatory of the symptoms, but does not imply pollen etiology. The causative factors fall into two main groups: (a) **specific**, including pollen, foods, epidermal structures, orris root or other inhalants and (b) **non-specific**, which may be operative in the pollen patient or in one negative to all recognized specific factors.

Perhaps climate deserves first place in a study of this group. No one has proven which factor is responsible, but a change in weather may aggravate a skin, nasal or chest condition.

Unnecessary surgery, or even topical treatment, of the nose commonly aggravates rather than soothes the condition. Many reflexes seem to produce or aggravate vasomotor rhinitis. The reflex through the visual tract is an example. Occasionally a structural abnormality and less frequently an extra-respiratory tract lesion is of significance. If the cause cannot be determined, many tend to attribute symptoms to bacterial infection. The latter is, I believe, of minor importance.

Irrespective of the cause of symptoms, they tend to be similar. They may be nasal obstruction, often alternating, sneezing, watery nasal discharge, itching of the nose, eyes, ears, skin of the face and neck. Lacrimation and photophobia are occasionally conspicuous. On examination the nasal mucous membrane is edematous, boggy with a characteristic pale bluish color. The examination is of little value in determining the type of vasomotor rhinitis or the cause of symptoms. The above signs and symptoms may have sudden onset and equally sudden offset. They may occur in certain seasons only, or may be perennial, and are frequently prodromata of "asthma."

The term asthma usually conveys a picture of the typical allergic or bronchial asthma; careful study discloses marked variations. Sudden paroxysms of dyspnea and wheezing are common to all, hence I designate the con-

dition as paroxysmal dyspnea—allergic, cardiac or miner's asthma. Skin tests are seldom of value in the last two, and this indicates the importance of differential diagnosis rather than routinely ordering allergic tests on all patients who wheeze. Emphasis upon a few factors in the history may enable one to differentiate without further examination. The age of onset of wheezing and whether it did or did not follow other allergic manifestations may clinch the diagnosis. The specific cause may be determined from the history.

The previous occupation, a hard rock miner for example, may point to etiology remote from allergy; the onset is usually in middle or late adult life. The x-ray may be necessary to, or valuable aid in, establishing the diagnosis of pneumoconiosis. Other causes of pulmonary fibrosis may likewise cause attacks of paroxysmal dyspnea simulating true asthma. If a patient presents typical cardiac asthma, there will be little controversy over the diagnosis.

There is, however, another great group of asthmatic patients presenting none of the classic symptoms of cardiac insufficiency which I believe are just as truly examples of circulatory dysfunction. The individuals may have had hypertensive heart disease for many years and suddenly develop typical asthmatic breathing, but without previous or co-existing decompensation. They have had no other allergy, their family histories are negative for these conditions and skin tests fail to reveal significant positive reactions. The use of adrenalin, to distinguish between these types of asthma has no value, as it is not uncommon for a typical "cardiac" asthma to obtain relief from it; on the other hand true allergic asthma, especially in children, may not respond to adrenalin. A careful physical and at least fluoroscopic examination are indispensable.

Many theories have been advanced to explain allergic phenomena. The most popular of these are: (a) Vagatonia—probably more the effect than the cause, (b) endocrinopathy, especially thymus or adrenals, (c) dietary defects, (d) organic or inorganic chemicals—usually a deficit, as of calcium, etc., (e) anatomic abnormality, and (f) a neurosis—formerly emphasized in asthma.

This does not exhaust the list of facts which may be obtained from the history, but merely stresses its importance. The second step may

be to attempt to demonstrate a cause for symptoms.

Since pollen sensitivity is common and of great interest to patients it might be well to correct some misconceptions. Allergic rhinitis is often attributed to rose, sweet pea, orange, goldenrod or other attractive and conspicuous blossom—rarely significant because they are insect pollinated; the pollen is sticky, heavy, is produced in small quantity and may be retained inside the blossom unless disturbed by insects. The bloom of weeds and grasses seldom attract the attention of man or insect. They depend upon wind for dissemination of their enormous amount of light, dry, small granules of pollen. Once suspended in the air it remains for long periods if there is air movement. A pollen sensitive patient should not have ornamental flowers, however, in his immediate environment; but it is seldom necessary to treat with these since they can be avoided.

After determining skin sensitivities, how shall one select the appropriate wind-borne pollens to use? The general practitioner commonly depends upon the biologic supply house for that information, which is rarely extensive or adequate. New Mexico and other semi-arid sections have received little attention from the ecologist or the botanically inclined allergist in regard to this particular problem. Little or no information relating to the botany of Gallup could be found. Before specific treatment could be applied to individuals of that community, it was necessary to make a detailed survey. It is not expected that the general practitioner should go to this trouble, but he should have a dependable source of information if he is to undertake pollen therapy.

A few general rules of treatment of the respiratory allergies may be enunciated. Avoid known excitants. Since pollen, orris root or house dust cannot be avoided, treatment is necessary and hypodermic administration is the best method. If the antigen does not contain the significant pollens to which the patient is sensitive, its effect will be probably little more than a non-specific one. One may ask why not advise the patient to move to a more suitable locality. There is no climatic mecca for allergic patients, and one may have severe symptoms in the locality which afforded complete relief to another. One may "wear out" a

climate and be forced to move many times to find relief. Drug medication should be in the direction of prevention if possible, but if symptoms appear then palliative and symptomatic treatment is necessary. The smallest amount of the least potent drug which will give the desired effect should be employed for prevention or relief. There will be need enough later for the maximum doses of the more potent drugs. Since topical treatment of the nose is one cause of nasal symptoms, it is not advised for routine use. Ephedrine by mouth may accomplish the desired results with less discomfort.

Self-medication with adrenalin for paroxysmal dyspnea is seldom justified. It has unpleasant side effects, and does not favorably modify the course of the condition. Opiates are rarely indicated, and may add definite hazards except in a few cases of "circulatory" asthma. If used at all, the doses should be small, rarely the size used for relief of pain. The atropin group does not find favor with patients, because of drying bronchial secretions and otherwise retarding recovery. Hot or cold drinks, especially hot coffee, may be all that is needed for relief. If the patient is known not to be hypersensitive to aspirin, five to 10 grains of it may prevent an attack or afford relief during one. A little time spent instructing the patient to eat and drink little for the evening meal and to ventilate the sleeping quarters only indirectly may obviate the need for most medication.

Summary

Allergy may be met in any field of medicine, but it does not answer all unsolved problems. The clinical conditions are duplicated in patients not shown to possess allergic "constitutions." A careful history is the most valuable aid in differential diagnosis.

Allergic traits in one or both sides of the family, onset of the condition early in life, presenting complaint being but one of a series of allergic episodes, are important findings. A history implicating an allergen, and a positive skin test to it, may be all that is necessary to complete the diagnosis.

Climatic or other irritating agents may be as important as pollens or other specific factors in the production of symptoms.

Treatment is entirely an individual prob-

lem and may vary from one attack to another in any patient.

Specific prophylaxis, avoiding the cause, if possible, or treating with it is a well established and effective means of control. Even with this regimen, palliative and symptomatic treatment may at times be necessary.

Give no medication which may intensify the discomfort. Employ the smallest effective dose of the least potent drug which will prevent or abort symptoms.

ACUTE YELLOW ATROPHY OF THE LIVER

(Case Report—Autopsy)

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The following is a description in a man of 61, of a typical picture of simple catarrhal cholangitis complicated by moderate edema of parts of his body, which ran a course of six weeks before ending in death from acute yellow atrophy of the liver.

A white, real estate agent, age 61, came to our office July 31, 1935 with the chief complaints of jaundice and weakness. His present illness began four weeks before, characterized by slight fever, soreness over the gall bladder area, two or three slight chills, clay colored stools, jaundice, marked loss of appetite, dark urine recently becoming scanty, swelling of feet, hands and abdomen and blurring of vision. His average weight was 155 pounds; at the time of examination he weighed 163 pounds, the increase presumably due to the swelling, which he thinks decreases slightly at night.

In the past history the outstanding symptom was a stubborn constipation for 25 years. He claimed he has not had a natural bowel movement in that time. He had had pulmonary tuberculosis—arrested years ago. He had no particular digestive disturbance except that he could not eat cabbage or greasy foods. There was no past history of definite gall bladder trouble. His appendix was removed in 1926 and he has known that he has had low blood pressure for years. He was not a user of alcohol in any form. His only medication had been caroid and bile salts.

Physical examination revealed a middle aged man of medium stature noticeably jaundiced. He presented the appearance of being exhausted. Head, neck, heart and lungs were negative. There was a moderate but definite pitting edema of the hands, anterior abdominal wall, feet and legs to the knees. The abdomen was enlarged and difficult to palpate satisfactorily. There was slight tenderness over the gallbladder area. The liver and spleen were not palpable. His temperature was 98.4, pulse 58 and blood pressure 95/70. The urine had a trace of albumin, numerous granular and hyaline casts and much bile; the specific gravity was normal. A diagnosis of catarrhal jaundice was made but we were at a loss to explain the edema. The possibilities that were thought of were cancer of the head of the pancreas with obstruction of the portal vein and cirrhosis, but neither seemed likely.

Hospitalization was advised but due to financial reasons he was placed on treatment at home. We gave him phosphate of soda every morning, a restricted fluid intake and large doses of diuretin. After four days he was no better, and was admitted to Hotel Dieu. His jaundice increased, nausea and vomiting became more pronounced, constipation more severe and appetite extremely poor. The urinary output was about one-fourth to one-half of the intake in spite of daily injections of salyrgan and the administration of digitalis by mouth. The temperature ranged between 97° and 98.6° until 36 hours before death when it steadily rose to 104°. The pulse ranged between 48 and 88 until four days before death when it slowly rose to 146. Central nervous system symptoms, such as irrational talk and mild stupor, made their appearance four days before death and gradually grew worse.

The following is the post mortem report by Dr. W. W. Waite:

The body is of a large, poorly nourished white man, markedly jaundiced. Abdomen only was examined.

The liver is small—720 grams—with smooth surface. The spleen is somewhat enlarged. No other lesions were noted.

The microscopic examination of the liver shows destruction of cells; in places there are islands of variable size not corresponding to any certain part of the lobules. The liver cells are hazy, some containing fat granules and all of them poorly defined. The areas in which the liver cells are gone are made up of loose connective tissue which enclose bile stained deposits. In places there is increase in fibrous tissue.

Diagnosis: Chronic Sclerosis and Acute Yellow Atrophy.

As to the occurrence of acute yellow atrophy of the liver in a series of 28,000 patients with jaundice seen over a period of 23 years at the John Hopkins Hospital there were six cases of acute yellow atrophy. The etiology is unknown. It usually occurs between the 10th and 40th year, 50 per cent being between 20 and 30. It is not uncommon in children. In adults two-thirds of the cases are female. It is relatively common in the last few months of pregnancy.

Clinically there is a progressive reduction in the size of the liver, with jaundice of increasing intensity and pronounced cerebral symptoms. For the first two or three weeks the symptoms are those of acute catarrhal jaundice, which may start with respiratory symptoms, such as running of nose, sneezing and mild cough. Or it may be initiated by gastro-intestinal disturbances, such as nausea, vomiting, general malaise, anorexia, constipation, pain and uneasiness in the epigastrium. If suddenly the temperature which has been subnormal begins to rise and the pulse, which has ranged around 50 to 70, begins to ascend, the patient becoming restless with muscular twitching and mental confusion, the pupils dilating, the jaundice more intense, the gastro-intestinal symptoms more pronounced, delirium and coma intervening and a marked diminution in the size of the liver, the diagnosis of acute yellow atrophy can usually be made. An early laboratory finding is the enzymatic detection and estimation of tyrosin and leucine in the urine. This means that a destructive process is going on in the liver. The amino-acid nitrogen of the blood exceeds the normal limit of nine mg. per 100 c.c. and the estimation of cholestrol is a valuable prognostic aid. In biliary cirrhosis tyrosin and leucin will not be found in the urine and the liver will be enlarged unless it is at a late stage of cirrhosis when fibrosis and contraction gives a small liver.

The treatment of acute yellow atrophy of the liver is preventive and symptomatic. Patients subject to catarrhal conditions of the stomach or duodenum should be treated by diet, gall bladder drainage, etc., as preventive measures. Symptomatically glucose should be given to combat the glycogen deficiency of the liver and saline solution to restore the chlo-

ride lost by vomiting. Free catharsis, diuretics and sedatives are also indicated.

The one lesson we have learned from this case is to give guarded prognoses in jaundice cases and in the event that a case of acute jaundice has a sudden rise in temperature and pulse and a sudden onset of cerebral symptoms to be prepared for the outcome.

ACUTE SUPPURATIVE APPENDICITIS

(Report of 206 Consecutive Cases)

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The principal premise of this paper is to present: Two hundred and six cases of appendicitis with diagnoses of acute suppurative appendicitis, all of which required drainage; mortality per cent; age incident; number of cases that had laxatives before operation; distance each patient traveled to reach the hospital; and complications encountered after operation.

For more accuracy in determining the causative factors in the mortality of this series, the cases were divided into three classes, as suggested by Keyes.

Class one embraces all unruptured cases

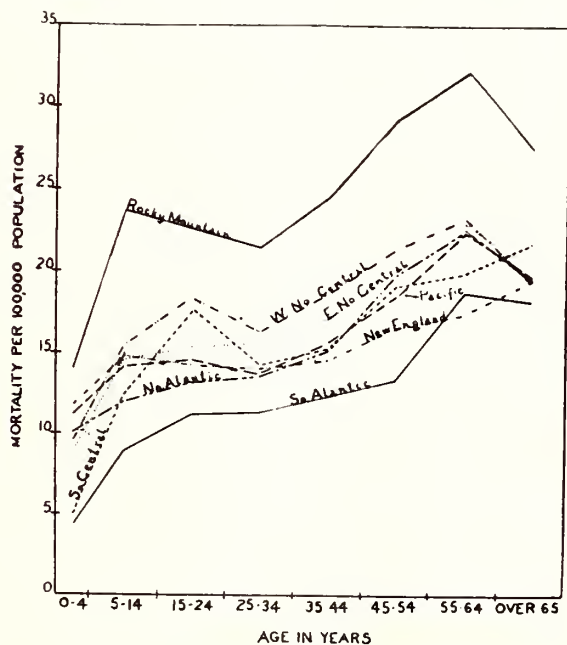


Fig. I. Appendicitis death rate by age groups in various geographical areas in the United States (1926-1929).

without peritonitis; the appendices were greatly swollen and covered with fibrin; considerable free fluid was present, sometimes even cloudy; in all where there was free cloudy fluid Penrose drains with gauze wick were used.

Class two included ruptured cases with abscess or with a localized right iliac peritonitis; they usually had two Penrose drains, one placed at the site of the excision and the other in the lumbar gutter.

Class three included patients with diffuse peritonitis; they usually had one drain in the cul-de-sac, one in the lumbar gutter; the appendices were usually acutely inflamed, ruptured and lying free in the peritoneal cavity with little tendency to wall off the infection; or abscesses had been poorly walled off and on account of the time required and the great distances some of the patients had to travel, broke loose and contaminated the general peritoneal cavity.

In class one were 86 cases—the youngest 22 months and the oldest 68 years—with no deaths. There were definite statements of having had laxatives by six of the 86; seven had active pulmonary tuberculosis.

In class two were 68 cases—with one death. A patient 72 years of age, died four days after operation with severe asthma and bronchopneumonia. He had no laxatives; operation was 19 hours after the onset of symptoms; he lived in the city and required no transportation. Two patients were re-operated for intestinal obstruction. One patient was five months pregnant. Dr. Ottosen (Willard, New Mexico) brought the patient 55 miles for operation and later delivered her; he reported a normal course throughout. The one death gave this class a mortality of 1.16 per cent. In two cases the appendices were not removed; the abscesses were drained, and in neither case has the patient returned for secondary operation.

In class three were 54 cases—with 13 deaths—a mortality of 24.07 per cent. All of these fatal cases had had laxatives before operation. They had three Penrose drains, usually in the cul-de-sac, the lumbar gutter, and the point of excision. Four had intestinal obstructions which required reoperation, two of whom died; one had post-operative hemorrhage, was reoperated and died; and one had acute hem-

orrhagic nephritis. The mortality was 60 per cent in the reported cases.

For the entire series here reported there was a general mortality of 6.8 per cent, or 14 deaths—57.2 per cent of the 14 being males.

In order to cover consecutive cases, I am reporting one case which arrived at the hospital moribund, dying one hour later; section revealed acute suppurative appendicitis with secondary diffuse peritonitis; this case was not operated upon, and is not used in computing the percentages.

Laxatives were taken freely in this series, which fact was undoubtedly responsible for the rupture and spillage in many of the cases. In trying to determine the exact number receiving laxatives, the records were sadly deficient in the information desired. In spite of inadequacy in class one seven per cent had laxatives; in class two about 15 per cent and in class three about 40 per cent. All fatal cases, with one exception, had had laxatives. In J. M. T. Finney Jr.'s series compiled in the Union Memorial Hospital of Baltimore, 67.57 per cent of the fatal cases and 44.2 per cent of the non-fatal cases had had laxatives.

Dauer and Lily state that the mortality rate in appendicitis in the Rocky Mountain Region is higher than in any other section of the country, and gave as the possible reason for this condition the more frequent occurrence of the disease in this section; to this I wish to add that the great distances that patients have to travel to reach hospitals to receive surgical care is also an important factor. Using for convenience two miles as the distance traveled by patients who come from Albuquerque, and the New Mexico Highway Department Official 1935 Road Map for computing the distance each patient traveled after a diagnosis had been made to reach the hospital, I find that the general average of distances traveled by all cases to be 45.5 miles, and the greatest distance traveled by a patient was 389 miles. The great distances traveled added hours to the preoperative time, and the ride, in most cases not in ambulances, played an important part in the spread of infection and added to the fatigue of the patient, which in turn lowered general resistance.

Treatment of acute appendicitis in our hands has been to operate as soon as a diagnosis is made. A right rectus incision is con-

sistently employed. The appendix stumps have been inverted in about the same number had as simple ligation and cauterization.

Fluids were forced in all cases, using all possible means except by mouth. Hypodermoclysis of glucose and saline and rectal drips of 250 cc. of tap water being routine in all cases with peritonitis. It has been a rule for several years to instill two quarts of warm tap water into the rectum before they leave the table. Of course some patients expel some of it, but most will retain the whole amount. Infusions and transfusions (direct only) were used as indicated. Fowler position was used in all cases where needed. Gastric lavage was used freely, and constant drainage by the Levine tube where indicated. No enterostomies were done in this series.

The anesthetic of choice was ether with gas induction; spinal and ethylene were used in cases with pulmonary complications.

Conclusions

1. Early diagnosis and prompt operation is the treatment for acute appendicitis.
2. Great distances traveled by patients in the Rocky Mountain District is partially responsible for mortality per cent.
3. Secondary operations are tolerated poorly.
4. Free drainage is important.
5. Absolute avoidance of laxatives is imperative.

PREMALIGNANT AND MALIGNANT SKIN LESIONS

(With Special Reference to their Treatment by Endothermic Methods)

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By endothermy is meant the production of heat within the tissues by the resistance the tissues offer to the passage of a current of high frequency. The electrode or applicator is cold in contrast to that of the actual cautery which is hot. Endothermy is applied surgically in three ways: Electrodesiccation, a superficial destructive process; electrocoagulation, which causes deeper destruction; and the high frequency cutting current, which causes a linear disintegration of the tissues with a minimum of dehydration.

I do not propose endothermic to the exclusion of other methods. The dermatologist, or other practitioner who treats premalignant and malignant cutaneous lesions, must have at his disposal several methods, always including x-rays and radium, and at times must call the surgeon to his aid. The treatment of a given case depends upon the location, size, clinical history, appearance, and usually the results of microscopic study. In certain types of cases I believe endothermic methods, alone or in combination with radiation, constitute the treatment of choice.

The principal lesions of the skin and orificial mucous membranes which may be said to be premalignant are: Seborrheic keratoses senile keratoses, chronic actinic dermatitis (farmers' and sailors' skin), arsenical keratoses, leukoplakia, radiodermatitis, moles, xeroderma pigmentosum, cutaneous horns, lupus vulgaris, burns, fissures, and sebaceous cysts.

Electrodesiccation or coagulation constitutes an excellent treatment for moles and the various keratoses, although senile and seborrheic keratoses may also be treated successfully by radiation. Lesions which show signs of approaching malignancy are best excised with the cutting current to be studied microscopically. Senile keratoses and cutaneous horns are particularly likely to become inflamed about the bases, and it is impossible to tell whether due to trauma and infection or early malignancy. Such lesions usually do not cover much area, and can be conveniently excised en toto for study. The cutting current produces a minimum of hemorrhage and trauma, and if neatly done there is little or no distortion of the specimen.

The types of malignant disease usually found in the skin are: Basal cell epithelioma, non-pigmented, pigmented, or multiple flat superficial, basal-squamous cell epithelioma, squamous cell epithelioma, non-pigmented, and multiple pigmented hemorrhagic (Kaposi) sarcoma, malignant melanoma, Paget's disease and Bowen's dermatosis.

Basal cell growths, which may be pigmented or non-pigmented, are usually radiosensitive, and can be successfully treated with either radium or x-rays. Occasionally one is found which does not respond well to a safe amount of radiation. Small lesions can be cured more quickly and more surely by electrocoagulation

with good cosmetic results. My practice is to excise the small lesions with the endothermic cutting current and coagulate the base, saving the growth for microscopic study. Larger basal cell growths are best radiated, particularly when they are in locations where scarring might cause deformity.

Basal-squamous (mixed type) tumors should be considered as the squamous cell variety: they are capable of metastasis.

Squamous cell epithelioma may be treated successfully by any method which completely eradicates or destroys all tumor tissue before metastasis has taken place. Although microscopic study gives a rough idea of the degree of malignancy and of radiosensitivity, these characteristics can not always be judged accurately. Where the growth is not large, I believe endothermic excision and coagulation preceded or followed by radiation is the safest treatment. The wound is left open to granulate and soon fills in, leaving only a soft slightly depressed scar. If combined treatment is used, the radiation should not be too intense before healing has begun, as large doses of x-ray or radium have an inhibitory effect on healing, causing a longer healing time and less complete filling of the defect. While the cosmetic result must always be secondary to the complete destruction of the lesion, and the prevention of metastasis, still we can not totally disregard the patient's appearance after the cure. Large squamous cell lesions (of the lower lip for instance) are best first treated with filtered x-ray or radium needles or radon seeds. If such lesion proves radio resistant, surgical excision and plastic repair may be necessary. Palpable lymph nodes appearing in the group which drain the area of the skin lesion are a problem for surgery, radium implantation or heavy intensive surface radiation.

Non-pigmented cutaneous sarcomas are comparatively rare. They vary considerably in radiosensitivity, some responding readily to intensive therapy, others being resistant to radiation. Where this is practicable, wide excision is the safest and surest treatment. Small growths are best treated by thorough electrocoagulation followed by radiation.

The multiple pigmented hemorrhagic sarcoma of Kaposi responds to either radium or x-rays and radiation is the treatment of choice

rather than endothermic methods. New lesions continue to appear but the disease can be kept under control almost indefinitely by proper radiation therapy.

Melanoma (nevocarcinoma, melanotic sarcoma or melanotic carcinoma) is an extremely malignant lesion, metastasizing early and extensively. Since there is considerable confusion regarding the origin of the tumor cells, this type of growth is for the present best designated as melanoma. These lesions arise from pigmented or non-pigmented moles. In my opinion these lesions should be thoroughly radiated, followed by electrocoagulation and wide endothermic excision of the coagulated mass. Unless the treatment is thorough an early cure is hopeless.

Paget's disease of the nipple and Bowen's dermatosis were formerly classified as premalignant conditions. They are both now known to be examples of intraepidermal cancer. Paget's disease is usually associated with duct cancer. It is unknown whether the lesion about the nipple is a metastasis from the breast or whether there is a multiple primary origin of the tumor, including both the ducts and the skin. If there is no palpable evidence of a growth within the breast, the condition may be cured by heavy radiation to the breast. Later cases should be subjected to amputation. While cases of extra-mammary Paget's disease have been reported, there is some doubt as to the diagnosis. The lesions of Bowen's disease respond to either electrodesiccation or radiation.

SUMMARY: Endothermic methods, including electrodesiccation, electrocoagulation and endothermic excision, offer a valuable method of treating certain types of premalignant skin lesions and frank cutaneous malignancies. This type of treatment is not to be considered a cure-all for superficial malignancies. In certain cases it is certainly the treatment of choice; in other cases radiation or surgery is preferred. Often a combination of two or more methods is advisable. The selection of the proper treatment for the individual case is a matter of experience, based on the size, location, and history of the lesion and the characteristics of the growth. In securing tissue of malignant or premalignant lesions for microscopic study, the endothermic cutting current is to be preferred over other methods.

ALCOHOLIC PELLAGRA

(A Case Report)

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That a deficiency of the pellagra-preventive vitamin (B2 or G) is the cause of pellagra, or at least plays a major part in its cause, is best proven by the fact that the average case responds to a diet rich in this vitamin and is likely to relapse when this factor is omitted.

It is well known that the syndrome commonly known as pellagra may appear following alcoholic debauches. These cases are often classified as pseudo-pellagra. We believe such cases to be true pellagra, and in a limited experience have not been able to distinguish them from ordinary cases in which there was no history of alcoholism. The excessive or long continued use of alcohol interferes with the patient's appetite and results in a deficiency similar to that in the non-alcoholic cases of pellagra. The case presented, besides demonstrating the relation of alcohol to the attacks, also shows an unusual feature of the skin lesions which we have not seen nor heard mention of before.

CASE REPORT: A 36-year-old Mexican laundryman was admitted to the El Paso City-County Clinic July 30, 1934, complaining of an eruption on both forearms, a burning sensation of the mouth and tongue, weakness in both legs, and anorexia.

The patient had been in good health most of his life until early in September, 1933. At this time he noticed a burning sensation around both ankles which disappeared in a few days, to be replaced by a rough, scaly, eruption. This eruption gradually involved both calves about half way to the knees. At about this time the patient moved to the country, and ceased drinking alcoholic beverages. In about two weeks, with no medication, the eruption cleared up, leaving several areas of dark brown pigmentation on both ankles and calves. In April, 1934, the patient moved back into the saloon district of the city in which he formerly resided and resumed his drinking habits. (It should be stated that for ten years previous to September, 1933, the patient had

been in the habit of drinking from one-half to one pint of whiskey or sotol per day.)

In the first week of June, 1934, an eruption similar to that preceding September appeared on the radial sides of both forearms. Extending from the wrists to the elbows was a scaly, dry, brownish dermatitis typical of pellagra. Again the patient ceased drinking and on a proper diet the eruption disappeared in about two weeks, leaving no residual signs. After a week he resumed his former drinking habits. He soon noticed, for the first time, that his mouth and tongue were sore and sensitive to hot foods and spices.

Burning of the skin of the feet, ankles and legs developed with weakness of the legs. There was a diarrhea, three or four stools daily. There were no mental changes. Within a few days after the onset of these symptoms an eruption appeared on both forearms. This covered the anterior and posterior surfaces, extending from the wrists to about 10 cm. above the elbow joints. The affected areas were exactly symmetrical, and did not encroach upon the sites of the former, now healed, areas of eruption on the forearms. A sharp line of demarcation limited the present areas of eruption from the formerly affected sites. Upon two or three occasions the patient said that he "saw double," and he also noticed that all foods seemed to taste alike. He was given a mixture of hydrochloric acid and pepsin and a suitable diet. Alcohol was forbidden. Within one week the eruption on the arms began to subside, and had practically disappeared at the end of four weeks, leaving only a brawny roughness of the skin.

Physical examination showed only the eruption on the forearms, as described above, and several small brown pigmented areas on the legs and ankles. The rash on the forearms was dusky red in color, infiltrated, rough, and firm to the touch.

Laboratory tests revealed a trace of albumin, a few red cells, a few white cells and a small number of coarse granular casts in the urine. Blood Wassermann and Kahn were negative. The blood showed 90 per cent hemoglobin (Sahli), 4,250,000 red cells, 6500 leucocytes, 48 per cent polymorphonuclears, six monocytes and 46 lymphocytes. Gastric analysis showed 10 degrees total acidity, no free hydrochloric acid, a trace of lactic acid and a

small amount of occult blood. X-ray studies of the gastrointestinal tract, using a barium meal, showed no abnormalities.

The typical pellagra syndrome may be due to over-indulgence in alcohol. In a series of skin eruptions entirely different sites were affected at various times, the site of one eruption seemingly having immunity to further involvement. This was marked on the forearms, as one outbreak practically encircled an area of normal skin which was involved during a previous attack.

THE CONTROL OF FOOD ALLERGENS IS EXTREMELY DIFFICULT

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It has been my contention that foods, as causes of allergic reactions are far more difficult to control than are other allergens such as pollens, bacteria, animal emanations, dusts, etc., and that foods are probably more common offenders than are other allergens.

Allergens which may in a measure compare with foods, in difficulty of management and frequency of offense are bacteria. From birth to death we have bacteria; we may become sensitized to their proteins. Treatment, however, will usually control one's sensitiveness to them.

Another allergen which is extremely difficult to avoid is orris root; nearly every woman one meets has her face and body covered with powder; even men use it; it's in face powder, bath powder, tooth pastes, and many other cosmetics; one may keep his distance but orris root reaches him. One, however, may be given tolerance to orris root.

House dusts, likewise, are ubiquitous. One may change house dusts by changing houses. House dusts may be given in small doses gradually increased until tolerance is established.

Pollens may be given by hypodermic needle, or even by mouth as proven by Dr. Gatterdam, to raise tolerance to them and relieve hayfever and asthma; or one may move away from these irritating substances.

In the case of animal hairs or feathers, the animals, birds, furs, pillows, mattresses, etc., may be done away with or one may move to

a section where these agents are not sufficiently common to cause trouble, or they may be dealt with in other ways; then, too, tolerance to the allergens may be developed by the small dose inoculations gradually increased.

The skin reactions to pollen, dusts, orris root, animal emanations, etc., are usually clear cut.

Foods one has constantly within him. A food which produces definite distress immediately after one has eaten it is easy to detect and one knows which food to blame for the trouble; but foods frequently produce delayed effects; then, too, one eats so many foods at a time as a rule that he doesn't know which one to blame when reactions result. Skin tests to foods often are not positive or at least not strikingly positive even though they cause trouble. Again one may go on a limited diet, for example buttermilk, and he may become free from his trouble (asthma, eczema, or other allergic reactions), and staying on the buttermilk, he may become sensitive to its proteins and develop an allergic state from them. Taking too much of any one article will lead to sensitization to it.

As I have indicated in the first part of my paper, a food ordinarily may be perfectly harmless, but because it has lain on the grocer's shelf or in the sun in the producer's truck it produces violent reactions.

The cooking of food may destroy or lessen the effects of allergens. For this reason a person may eat a food which is thoroughly cooked without trouble but cannot take it another time without harm when raw or even moderately cooked. One may instruct his cook in adequately cooking his food and the cook thinking the idea is all foolishness may slight the job and trouble will come with the reason not apparent.

Then, too, a combination of certain foods may cause trouble while any one of the foods taken alone is harmless. The explanation is that no one food produces sufficient reaction by itself to produce trouble, whereas two or more of them in combination are enough to give the disturbance. Certain foods are especial problems because they are used in a variety of ways and dishes. Onions, for example, are used in sauces, catsups, dressings, salads, etc. Wheat, too, is extremely difficult to avoid as it is found in bread, corn bread, rye bread,

cakes, crackers, gravies, etc.; the same is true of milk, eggs and many other substances. When one is sensitized to any one or more of the common articles of diet the problem of avoiding it or them is indeed difficult.

Overtaxing one's digestive apparatus is often a cause of trouble. One may simply take too much food or he may take too much of a certain article of food. The amount one eats depends upon habit. I do not need to dwell upon the difficulty of teaching a person to control his appetite. Taking too much food and especially too much of one article of food predisposes toward development of sensitizations.

If the proteins before the amino acid stage of digestion get into the blood stream in sufficient quantities because of an overtaxed digestive apparatus and the chemicals of the tissue are not sufficient to deal with the undigested food, the whole—or split—proteins are certain to give one or another type of allergic reaction. It seems to me that this may account for the allergic individuals who give no hereditary basis for their allergies.

I have proven that good digestion is essential for recovery from allergic diseases. It is equally important in preventing allergy. Digestion may be inhibited by a variety of factors. It is temperamental. Cannon showed this decades ago.

Foci of infection, especially those about the nose and mouth may readily set up gastritis and depress the stomach's secretion so that there may be little or no gastric digestion. Fatigue, excitement, nervousness,—arguments, quarrels, domestic discord—and many other factors depress digestion and check peristalsis, but do not check bacterial growth. Fermentative processes are thereby favored. One who is having asthma, eczema or pruritis from his food knows how a little nervousness during his meal will make him more allergic than usual.

If one develops a severe allergic reaction it takes days usually before he gets back to where he was before; in this interim, he is readily affected by foods and other allergens which would ordinarily not produce harm; since he is on edge as it were, the slightest allergen may tip him over into severe reaction.

Since good digestion is extremely important in preventing allergic reactions, it is important that patients eat slowly and chew their food

well. Eating slowly or rapidly is a matter of habit, and habits are notoriously difficult to change. The physician may instruct the patient to eat slowly, but if he has had the habit of eating rapidly it is a foregone conclusion that the physician's advice will have no influence—at least for a long time. It is necessary that a patient train himself to eat slowly if he hopes to recover and stay recovered from his allergic reactions that are due to food. If he is not sensitive to foods, obeying these rules will tend to keep him from becoming sensitive to them.

Thorough chewing of food is a matter of habit but it also may depend greatly upon the presence of teeth and the shape of the mouth. One may have his own teeth and the occlusion may be so poor that he is scarcely able to use them for mastication. The question of finances may enter in, to such an extent, that one cannot afford to have the necessary work done to obtain proper occlusion, or to have the proper bridges or plates made to give adequate masticating surface. Poorly fitting dentures are always a handicap and predispose to accentuation of allergic states.

It has been stated repeatedly by allergists that the substances contacted in the greatest amount and frequency are most likely to be the most serious allergens. Since one has food in him from shortly after birth to death, it would seem that food is certainly a most common allergen. On this course of reasoning the food one likes the most, other things being equal, are likely to be the source of his allergens. It is important, then, not to eat too much of any one food at any one meal nor too frequently and regularly, but to eat a variety—a little of this and a little of that.

The question of raising tolerance against foods by the administration of peptones, specific peptones or propetones is not proven and is probably next to impossible. Complete strict elimination of an offending food from one's diet for a sufficient length of time will desensitize to it or at least allow it to be again eaten, in small amounts—infrequently, without harm.

My belief is that it is scarcely possible to over emphasize the importance of careful selection, preparation, and mastication of food; eating is serious business and deserves far more thought than it ordinarily receives.

TREATMENT METHODS OF BREAST CARCINOMA

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Surgery has long been and remains the primary method of treatment for breast malignancy. In the best hands the percentage of five-year "cures" is about 30. This result is secured from operable cases alone. Mortality increases directly with the inoperable cases those having adherent axillary metastases, supraclavicular metastases, bone and other distant metastases. In addition, however, irradiation is a considerable factor in adding to the percentage of five-year "cures." It is not by any means suggested as a substitute for surgery. Neither is it suggested as a small part of a primarily surgical plan of attack. It is suggested as a valuable part of a plan that offers most to the patient with mammary carcinoma. Post-operative irradiation alone added to surgery increases the percentage of five-year "cures" by about five. When properly combined to secure the best result the five-year results increase to about 40. This brings a net gain of 10 per cent by a coordination of methods, the results of each of which, alone, are much the same. There are cases to which surgery offers little, and in some cases it may even shorten life. When the breast lesion is firmly attached to the chest wall, when the axillary nodes are firmly fixed, in the presence of a swollen arm—then surgery actually shortens life as has been conclusively shown by the late Burton J. Lee and associates of Memorial Hospital in New York City. It is too often that the radiologist sees these patients alone. About 10 per cent of all breast carcinoma cases are hopeless from the outset from a surgical standpoint. Some of these may be aided by irradiation.

The addition of pre-operative irradiation, combined with surgery and post-operative irradiation is the plan that offers most to the patient. Objections most commonly offered to this procedure are: (1) Dangerous delay—not true; there is a good chance of forestalling local and distant metastases during treatment with heavy irradiation; (2) delayed healing of the operative wound does not occur when

the irradiation is properly applied; (3) ineffectiveness—figures prove this untrue.

I cite a study of 217 cases which have been followed for five years or more:

Five years—217 patients: 88 patients (41 per cent) alive and well without symptoms; 13 alive but have recurrence; 109 dead; five untraced; and two died from disease other than cancer.

Seven years—130 patients: 45 alive and well (34 per cent); five alive but have recurrence; 73 dead; five untraced; and two died of disease not cancer.

Ten years—74 patients: 16 alive and well (22 per cent); one alive but with recurrence, 55 dead; two untraced, one died of disease not cancer.

Westermarck has followed a large number of cases for from five to seven years and finds that irradiation nearly doubles his percentage of five-year results. Of 307 cases, 162 received the combined surgical-irradiation treatment. Of these 75 received surgery followed by x-ray and 25 received irradiation before operation and following. After from five to seven years 22 patients treated by surgery and post-operative x-ray (29 per cent) were alive and well. Of those receiving pre- and post-operative irradiation 18 (40 per cent) were alive and well. A comparison of the results of all methods used in Sweden only shows: Surgery—20-23 per cent; C Post-Op. X-Ray—29.3 per cent; Pre- and Post-Op.—40 per cent; X-ray C Endo.—28.6 per cent. It is clear that in this series the benefits of the combined method are far superior to any one method. Local recurrence is decreased after irradiation but the time of appearance of distant metastases is about the same regardless of the method of treatment. The interval between the first symptom and death averages 61 months in the cases having had pre- and post-operative irradiation in addition to surgery, while this interval is 39 months when only surgery is used, and 49 months when post-operative x-ray is added.

Lewis and Reinhoff, in discussing the 950 cases of breast carcinoma seen at Johns Hopkins hospitals between 1889 and 1931, and including all operators from Halstead to Lewis, do not include irradiation in their treatment because of the great number of cases seen before x-ray was used widely, 450 of their pa-

tients are known to be dead. Operative mortality is six per cent.

Adair reviews 196 cases seen at Memorial Hospital between 1916-1926 and concludes that a standard radical mastectomy in a good hospital will yield from 32-39 per cent five-year "cures." Of 37 cases treated by irradiation alone 36.6 per cent are alive and well after five years. Of 127 cases treated by combined irradiation and surgery 40.6 per cent are alive and well after five years.

Pfahler, a radiologist who is apt to be hyper-enthusiastic reports a five-year "cure" result of 55 per cent with pre- and post-operative irradiation plus surgery. This is far over the results obtained by others.

Summary: A worth while addition to the chance of a five-year "cure" of mammary cancer can be secured when the treatment consists of proper pre-operative irradiation. A net gain of 10 per cent is probable, which means, from the figures used herein, that the average patient will have about eight months additional useful life.

THE LARGER ASPECTS OF THE PROBLEMS OF HEART DISEASE*

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(Read before the Southwestern Medical Association, El Paso, November 21-23, 1935.)

Heart disease kills two and a half times as many persons as the second ranking cause of death—cancer. From 1900 to 1932 it has increased approximately 70 per cent. These facts are sufficient reason for the American Heart Association and its subsidiary branches. These and similar organizations all over the world, thoroughly awake to the facts, are projecting intensive, investigative campaigns with the hope of acquisition of knowledge that will assist in prevention and in improvement in diagnosis and treatment. Whether progress will prove adequate to overcome the advancing tide of mortality and morbidity is a matter for the future to decide. Our position is perfect-

ly clear. We must pursue an unending research into the problems.

Biological chemistry, bacteriology, physiology, experimental pathology, and biophysics are dominant avenues to the requisite information. It is fundamental that the cause or causes be understood. In general the causes of heart disease are fairly well appreciated, though certain features are obscure. This applies with special emphasis to the two most important causes of heart disease—essential hypertension and rheumatic fever. With methods of control of these two conditions, halving the death rate from cardiac diseases would be simple. Since the average cardiac drags out an existence of months or years of chronic invalidism, checking the ravages of the two major causes of heart disease is all the more apparent.

Rheumatic fever as a cause of heart disease varies widely in different sections of the United States due largely to climatic conditions. The area of the greatest incidence of rheumatic infection coincides with the area of the densest population. In the New England states, for example, there is approximately twice as much heart disease as there is in the extreme South and Southwest. The reason is at once apparent when it is recalled that in the colder climates rheumatic heart disease comprises more than 40 per cent of the total heart cases, while in the South it is the cause of somewhat less than 10 per cent. It is regrettable that rheumatic fever has not diminished, which means that there has been no reduction in rheumatic heart disease. The reason for this failure is that the exact cause of rheumatic fever is still in doubt. On the basis of extensive research, opinion is fast crystalizing that a strain of hemolytic streptococci is the etiologic agent; certain gaps in the knowledge prevent complete acceptance of this. There seems to be no valid reason for believing that rheumatic fever is not an infectious disease, but so far the causative agent has eluded detection.

A comprehensive survey of heart disease for the United States would probably show **essential hypertension** the cause of more heart disease than any other factor. Furthermore, there is cause to believe that essential hypertension is increasing in frequency. Primitive peoples—e.g., Africans, Chinese, Mexicans, and others, among whom hypertension is rare

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in their native habitat—migrating to highly civilized countries to live, show within a comparatively few generations an incidence of hypertension as high as, or even higher than that of the natives of the country of their adoption. With such facts it requires no complicated reasoning to arrive at the apparently definite conclusion that essential hypertension is largely the result of nervous factors consequent upon the stresses of modern life. As further proof of the correctness of the hypothesis that nervous influences, acting indirectly upon the vasoconstrictor nerves, are the essential mechanism in the early stages of hypertension, Hines and Brown¹ at the Mayo Clinic, and Schwab et al² at the University of Texas, have shown that the immersion in cold water (4°-5° C for 30 to 150 seconds) of one hand of a hypertensive subject causes a greater rise of blood pressure than does a similar procedure in normal controls. It appears, therefore, that while we accept the neurogenic cause of hypertension, we are ignorant of means whereby it may be minimized or controlled. The indications are for an increasing rather than a diminishing complexity in the average human life. The uncertainties in the economic and political realms, the products of science and invention, and the constant and increasing lure in travel, amusements, and sports are so close to the firesides of all that those whose vegetative nervous systems are hereditarily or otherwise easily thrown into disequilibrium will probably show essential hypertension in increasing numbers. While that is the vision at the moment, it is not at all unlikely that modifications of the current concept or possibility even radical change in the trend of thought regarding hypertension may be witnessed. This is because knowledge is fragmentary of the physiology of the sympathetic nervous system together with its intricate interrelationships with the central nervous system and the glands of internal secretion. In the final analysis essential hypertension will likely be found to be a nervous system response to the environment to which human beings are subjected. Unless the signs are altogether misleading there seems little hope that our system of civilization will permit a diminishing incidence of hypertension. Hence hypertensive heart disease with its varied assortment of clinical cardiac syndromes will without ques-

tion dominate all heart disease from the quantitative standpoint.

The third most important cause of heart disease is **arteriosclerosis**. This phase of the subject is confused by the fact that coronary artery sclerosis, the essence of arteriosclerotic heart disease, may result from the pure senescent type of arteriosclerosis or be secondary to a long standing essential hypertension. It seems preferable to consider as arteriosclerotic heart disease only that which results from non-hypertensive arterial degeneration. As a clinical type it is fairly distinctive and clarity of classification is better preserved if this rule is followed.

Arteriosclerosis of individuals past 60 years of age with or without hypertension is hopeless. At best it is slowly progressive, is unaffected by therapy, and will ultimately cause serious disability and eventually death. Should the coronary circulation bear the brunt of the atherosclerotic onslaught, arteriosclerotic heart disease is unavoidable when the reduction in coronary flow reaches a certain point. It appears that arteriosclerosis is inevitable beyond a certain period. It constitutes senescence. More or less clearly defined age limitations are apparently biologically predetermined, for the various animal species. It is, therefore, self evident that with extension of the span of life, there will be a greater number of persons reaching the arteriosclerotic age in which the biologic law of age limitation exacts its toll. Many will have arteriosclerotic heart disease. In the search for improvement in heart disease of this type, there is little cause for elation. Disturbances in cholesterol metabolism are important factors in atheroma if expressions in the current literature are a reliable index. Little is known, however, of the ultimate metabolism of cholesterol, its utilization in the body, and its functions in health and disease. The ray of hope it holds for the future is at least intriguing.

The final member of the quadrad of etiologic factors that account for 90 per cent of all heart disease is **syphilis** numerically a poor contender for honors alongside of rheumatic fever, hypertension, and arteriosclerosis. It is, however, responsible for 10 per cent or less of heart disease. The tragedy is that syphilitic heart disease should occur at all; adequate treatment of early syphilis should obliterate it

entirely as a cause of heart disease. It is the only form of heart disease for which we now possess adequate prophylactic measures.

With regard to the **minor causes of heart disease**, progress is being made in the fight against thyrotoxicosis with its affection of the heart. This progress has been chiefly the result of improved methods of diagnosis and treatment of the thyrotoxic state. For the future the goal should be the prevention of the causes of thyrotoxicosis, toxic adenoma and exophthalmic goiter.

A satisfactory therapy for bacterial endocarditides, especially the subacute type, since the etiology and pathogenesis are reasonably clear, may occur at any time.

It is not at all unlikely that the next great advances in cardiology will come from the biochemists. The pathological anatomists, the physiologists, the physicists, and the clinicians have greatly advanced the cause of cardiology in the past 30 years. Herrmann and his associates in the laboratories of the Department of Medicine in the Medical School of the University of Texas are engaged in attempting to solve the riddle of the chemical changes in failing heart muscle. They have shown that a close correlation exists between the glycogen-lactic acid cycle and the phospho-creatine mechanism, both of which are dependent, either directly or indirectly upon an adequate oxygen supply. For the present these and similar studies have no direct clinical application; but the future potentialities are great.

Conclusion

The prime function of the physician is to care for the sick, but he should donate a part of his energy toward investigation. The time is not yet, when all has been learned that can be by bedside study; real research by this time honored method is still needed. The problems of cardiology are begging for solution not only from the standpoint of the patients with heart disease, but of those who may be prevented from developing it. The greatest need is a clarification of our ideas concerning the etiology of rheumatic fever and of essential hypertension.

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STUDIES ON THE NATURE OF PHAGOCYTOSIS

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While outlining the results of physiological investigations in which phagocytosis played a prominent part (1) we were prompted to conduct research dealing with this complex phenomenon and a series of experiments was begun which has lasted six years. During this time so many new problems have presented themselves that we shall be forced to omit much of the experimental data which led us only to deeper darkness and serve no purpose here.

In attacking such a problem there were so many factors to be considered which apparently play some part in phagocytosis we were at a loss as to which phase of the question should be first investigated. After careful review of the literature we came to the conclusion that most investigators consider the problem one of cell permeability, and for this reason have applied physical laws in an attempt to solve the fundamental, underlying principles. As Fenn (2) points out, "it is not certain whether phagocytes ingest objects because of surface tension or in spite of it," and this statement has given rise to much controversy as to the exact nature of the mechanism involved. We have, therefore, commenced our investigation with a consideration of this phase of the problem.

Theoretical Investigation

Ponder analysed, theoretically, the electrical forces between cell and particle. By assuming that the particle is surrounded by an electrical double layer (the whole thus becomes electrically neutral) there is no repulsion between equally charged particles so long as the distance between them is large compared to the distance between the two layers of the double layer. When the distance between them becomes less there is repulsion due to the redistribution of the charges on the outer layers. In his calculations he considers only the outer layer of the double layer and reckons the redistribution of the charges and the resulting

electrical forces between the cell and particle, and arrives at the conclusion that when the distance between the two bodies becomes very small the repulsion between them becomes an attraction in case they both carry a charge of the same sign. These calculations were worked out on the basis of Culombs' Law, applied to a system composed of cell, particle and surrounding fluid. He suggests that in the preliminary stages of phagocytosis the electrical attraction causes the particle to stick to the cell, thereafter the early stage of ingestion takes place, followed by more and more complete ingestion until equilibrium is reached. The result is true providing the assumptions are true, and since the whole process of sticking and ingestion is part of a single process we must then admit that phagocytosis is an approach to an equilibrium. However, we are not prepared to accept either of these pre-suppositions, regardless of the value of the hypothesis, until further experimental results have been analysed.

We do admit, nevertheless, that free energy changes play some role in phagocytosis, and in considering the stickiness of the cell as playing a part in the process we realize that cells do adhere and that their separation involves an increase in the free energy of the system.

Kite (4) Kanai (5), Ledingham (6), and others have considered phagocytosis as taking place in two stages: 1—a stage in which the particle sticks to the surface, and 2—a stage of ingestion. But, as we have already pointed out, we believe that both are part of the same system or two phases of the same process and no theoretical advantage is gained in considering them separately, even in an attempt to simplify the above theories.

We next directed our attention to the factor of chances of collision between cell and particle and were impressed by a theory of Fenn's (7) in which he has shown that the availability of particles in suspension may be measured by their chances of collision with the leucocytes. This, he states, depends on two factors: 1—The relative speed of the settling of the particles, V_p , with reference to that of the leucocytes, V_c , (this shows, for example, the number of particles per minute which a cell is able to overtake, or vice versa, as it settles), and 2—a target factor given by

the square of the sum of the diameters of the particles, D_p , and the leucocyte, D_c . This factor is proportional to the circular area concentric with the particle, which the center of the leucocyte would have to hit in order that the edge of the leucocyte should not miss the edge of the particle, when one overtakes the other in settling through the solution. The chance of collision, R , is therefore;

$$(V_p - V_c) (D_p + D_c)^2 = R$$

He verified this formula, roughly, by measuring the relative speeds of different sizes of quartz particles and by rotating tubes containing particles and cells. In the latter experiments he found that phagocytosis is low at high speeds as neither particles nor cells had time enough to come in contact with each other during one complete revolution. As the tubes are rotated both cells and particles describe circles in the fluid the circumferences of which are proportional to their relative speeds of settling, and return to their original positions at the end of each revolution. If both cells and particles settle with the same velocity they could not readily come in contact and there would be very little phagocytosis. Likewise, if the particles become clumped the faster moving particles would have a better chance of overtaking a cell and would be ingested first, thus changing the chance of collision and the rate of reaction for the suspension as a whole.

After considering Fenn's theory we turned our attention to the effect of the size of the particles on the rate of settling to conclude our theoretical investigation, and found an admirable explanation of this factor by Northrup (8) whom we quote with little variation from his own wording.

The formula for the steady rate of fall for a small body in viscous medium was given by Stokes as:

$$V = \frac{\frac{2}{9} a^2 (D - d) g}{Z} \quad (\text{one})$$

where a is the radius, D the density of the particle, d the density of the solution, Z the viscosity of the solution, and g the acceleration due to gravity. This formula was tested by Perrin (9) for small particles by comparing the radius calculated from the rate of fall with that determined by direct measurement and he found a variation of only 0.0035, between them. This experiment shows that the parti-

les obey Stokes law with great exactness. It follows, therefore, that the speed of settling of different size particles, other conditions being the same, will increase with the square of the radius and the difference in rate between visible and microscopic particles will be enormous. Further, it is shown by the doctrine of equipartition of energy that the mean kinetic energy of the particles must remain constant, and, therefore, the velocity decreases as the size increases(10).

Svedberg has shown that this is not affected by the potential of the particle nor by the addition of electrolytes. Weiner suggests that this motion is due to bombardment of the particles by molecules of the solvent. In that case the motion becomes strictly analagous to the kinetic motion of the molecules themselves. A quantative theory for this motion was worked out by Einstein and later, independently, by von Smoluchowski; these theories have been verified experimentally by Perrin. The part of the theory which is of interest in this connection is the prediction regarding the final distribution of the particles at equilibrium. If the Brownian movement is really analagous to the kinetic motion of gases, then the distribution of the particles at equilibrium should be determined by the same law that regulates the density of gas at different levels. Equilibrium will be established when the effect of gravity exactly equals the osmotic pressure of the particles or the molecules. Since the osmotic pressure is proportional to the number of particles per unit volume the formula, as applied by Perrin, to suspensions becomes:

$$h - \frac{RT}{gN^{1/3} \pi r^3 (D-d)} \ln \frac{N_0}{n} \quad (\text{two})$$

in which N is Avogados number, D the density of the particle, and d the density of the liquid.

Perrin's experiments leave little doubt that the relation between the size of the particle, the rate of settling, and the final distribution is accurately expressed by formulas one and two. If the necessary data regarding the size of the particles, the viscosity of the solutions, etc., are known it is possible to calculate both the rate of fall of the particles and the final state of equilibrium. Briefly, it may be said that if the size alone is varied the rate at which the particles fall will be increased as the

square of the radius, and at equilibrium the distance from the bottom, at which the concentration of the particles will be halved, will be inversely proportional to the mass.

Perrin's equations and results were confined to the region near the surface of the suspension. Porter and Hedges(11) have measured at deeper levels and have found the particles distributed in accordance with the equation:

$$\frac{dn}{dy} = K n (1 - bn)^2$$

in which n is the number of articles, y the depth, and k and b are constants. This would lead us to believe that it is possible to construct an equation to deal with any given level and that the sum total of these equations would be so confusing as to be unworkable.

Although the rate of settling and final distribution of quartz and carbon particles seems to be on a firm theoretical basis, application of these principles to bacterial suspensions is most difficult owing to the size of the clumps and the uncertainty as to the surfaces. In any case most bacteria are so large that at equilibrium the individual bacteria as well as the clumps would collect on the bottom of the container. The theory may yet be of importance in the case of filterable viruses when more is learned of their exact nature.

It has been pointed out by various workers that the theories outlined may be of great help in determining the line of work to be followed by bacteriologists and immunologists, but phagocytosis is so variable and so vital a process that physical laws can no more be applied to it than to cell division for the present, at least, we must rely wholly upon experimental evidence (inaccurate as it is) in hope of learning more about this very important weapon in man's fight against disease.

Types of Phagocytic Cells

Many studies have been made to determine which cells of higher animals can take in and digest foreign particles, and to classify them according to this power. Metchnikoff has distinguished between the "motile" and "fixed" phagocytes, the former the leucocytes of the circulating blood, the latter certain connective tissue cells, splenic pulp cells, and certain cellular elements of the lymph nodes, the neuroglia tissue, and all phagocytic cells which are ordinarily confined to some definite localiza-

tion in the body. He further distinguishes between microphages, by which he designates the polymorphonuclear leucocytes of the circulating blood and macrophages. The macrophages include the fixed tissue cells already mentioned together with the large mononuclear elements of the blood. The macrophages are mononuclear as contrasted with the polymorphonuclear cells or microphages. At the present time the phagocytic cells of the tissues, the so-called tissue phagocytes, are designated as clasmatoocytes or histiocytes and the large mononuclear elements of the blood are spoken of as monocytes or transitionals. Both types of cells are regarded by histologists as being closely related and derivatives of the reticulo-endothelial system. Sabin (12) believes that these cells are identical and have a common ancestry from endothelium. Some observers believe that the vascular endothelium itself is a highly specialized tissue which has limited possibilities for further development except into fibroblasts. Cunningham, Sabin and Doan (13) have given the subject attention and conclude that there are two different types of phagocytic macrophages which can be distinguished by supra-vital staining. The clasmatoocyte shows an absence of pattern in the reaction to neutral red and in the position of phagocytized material. The monocyte has a striking and persistent pattern when stained with neutral red. The monocyte arises from mesenchymal cells in the spleen pulp, among other situations, and according to Cunningham (14) there is no endothelium in the spleen pulp. Sabin restricts the term "monocyte" to the type of cells occurring in the blood stream and the terms "macrophage", "clasmatoocyte", or "histiocyte" to the endothelial derivative possessing high phagocytic power.

Though there is still a great deal of uncertainty about the origin and derivation of the various cells participating in phagocytosis, it is clear that many different elements take part, and that of these the polymorphonuclear leucocytes of the circulating blood are the ones which bear the first brunt of the defense of the body, while the macrophages derived from the reticulo-endothelial system have been divided into cytologically differentiable types, there are still individual forms of phagocytosis which seem to depend on the nature of the stimulus and give a characteristic histological

picture to a variety of infections. Thus, the epithelioid tubercle with giant cells and their rosette-like nuclei, is characteristic of tuberculosis. Equally individual and striking are the types of giant cells observed about foreign particles of various kinds. Differentiation of the phagocytic process by the chemical nature of the stimulus has been experimentally determined by Sabin and Doan (15) for tuberculosis in that they have demonstrated that the phosphatid fraction of these organisms is particularly associated with the specific response of the Langhans type of giant cells and epithelioid cells, while the tuberculin active proteins stimulate a powerful clasmatoocyte accumulation, the clasmatoocytes possessing the power to ingest and break up tubercle bacilli.

To gain a clear conception of the participation of phagocytes in the response of the body to injury or invasion it is useful to follow the process of inflammation as it occurs in higher animals. An admirable work on this is by Adami (16).

By studying peritoneal exudates with neutral red or Janus green in supra-vital dye films, Sabin, Doan and Cunningham (17) have differentiated the various phagocytic cells in a manner that is of great practical assistance to bacteriologists.

(Continued in February issue)

NEWS ITEMS

Dr. W. V. Whitmore, of Tucson, spent his summer vacation in 1934 in writing a 100-page (typed) bound volume, entitled: "The Whitmore Dynasty of Bowdoinham, Maine." For almost two centuries the family had furnished numerous town officials—from the moderator at the incorporation of the town (1763) to the doctor's father, who served many years as selectman, and, later, tax collector.

The volume was donated to Bowdoinham as a Christmas present. To the natives it was the greatest book of the year. In fact, it became a circulating library. Many borrowed it and read it. The most frequent comment was: "It is fine."

A resident, prominent in town affairs for more than half a century, considered it of sufficient merit to justify his having a copy made to be preserved with the town records, historical articles and other valuable documents. This would seem like quite a compliment to the gentleman who has been away from that vicinity for 49 years.

Dr. Clarence E. Yount is City Health Officer for Prescott, Arizona. He recently was instrumental in securing funds for giving immunization against diphtheria to the Prescott school children.

BOOK REVIEWS

MODERN OFFICE AND GENERAL PRACTICE: By Deane R. Brengle, M.D.; Southern Publishers, Inc., Kingsport, Tennessee; Price \$3.25.

Dr. Brengle prides himself upon being a general practitioner, and has written this book with the idea of being helpful to general practitioners. There are 320 pages with an index. The subject matter is arranged alphabetically. He discusses a great variety of subjects, but there is no systematic arrangement other than alphabetical. Under T, for example, comes Tape Worm, Tetanus, Tonsillitis (for Dr. Brengle's information, tonsillitis should be spelled with two l's, according to the dictionary), Toxemias of Pregnancy, Tuberculosis, Typhoid. Under U comes Ulcer, Uremia and Urinalyses. He has a plan for medical economics' question which is well worth reading. The introduction is a short autobiography and is interesting. There are a lot of practical suggestions in the book.

MEDICAL JURISPRUDENCE: October Issue of Current Legal Thought, a lawyer's digest of law reviews; selected Abstracts from contemporary medico-legal literature; edited by Benjamin Werne, S.J.D., Editor-in-Chief, Current Legal Thought, Lecturer in Medical Jurisprudence, University of Newark; Prefaces by Hon. John Clark Knox, LL.D., Senior United States District Judge, S.D., New York Lecturer in Medical Jurisprudence, Long Island Medical College and Smith Ely Jelliffe, M.D., Managing Editor, The Journal of Nervous and Mental Disease, Co-author with Dr. William A. White of Disease of the Nervous System.

The subject matter of this number has material of interest to all physicians, and especially to those who have much to do with courts. A worms-eye view of the contents is obtained through reading the titles of a few of the subjects discussed: Duties of the Physician, Liabilities of Physicians, Legal Responsibility of Physicians, Public and Private Hospitals Distinguished, Medical Evidence and the Expert, Scientific Evidence in Criminal Cases, Determining Parentage, and Psychiatry and the Criminal Law.

There are 150 pages. There is no index; the table of contents, however, is fairly elaborate. This would seem to be an extremely valuable number of the Current Legal Thought for physicians to own.

SURGERY: QUEEN OF THE ARTS AND OTHER PAPERS AND ADDRESSES: By William D. Haggard, M.D., F.A.C.S., D.C.L., Nashville, Tennessee; Professor of Clinical Surgery, Vanderbilt University School of Medicine; Surgeon to Vanderbilt Hospital and St. Thomas Hospital; President, Southeastern Surgical Congress; former President of the American Medical Association, the American College of Surgeons, the Inter-State Postgraduate Medical Association of North America, the Southern Surgical Association, and the Tennessee Medical Association; formerly Lieutenant-Colonel, Medical Corps, U.S.A.; Consultant in Surgery, Mesves Hospital Center, A. E. F.; With foreword by William J. Mayo; 389 pages with 41 illustrations; Philadelphia and London; W. B. Saunders Company; 1935; Cloth, \$5.00 net.

This is a collection of addresses given by the author. Among the titles we find the following: Surgeon of the Wilderness—Ephraim McDowell, The Background of the American Surgeon, The Yellow Plumed Knight of Medicine—William C. Gorgas, The Romance of Medicine, The Qualifi-

cations of the Surgeon, Considerations of the Surgical Significance of Pain, Differential Diagnosis Between Gastric and Duodenal Ulcer and Gallstones, Surgery of the Gallbladder and Bile Ducts, Perforating Peptic Ulcer Appendicitis, An Analysis of 3344 cases with a Remark on the Delayed Operation in Delayed Appendicitis, Acute Intestinal Obstruction, Tumors of the Kidney, A Study of 500 Breast Tumors with Surgical End Results, The Unnecessary operation, and the New Ideal in Hospitals. Any one of these essays is worth reading, and those dealing with surgical practice are of extreme value because of the author's large experience.

MODERN DRUG ENCYCLOPEDIA AND THERAPEUTIC GUIDE: By Jacob Gutman, M.D., Ph.D., F.A.C.P.; Consulting Physician, Manhattan General Hospital, New York; the Riverdale, Shore Road, Williamsburg Maternity and Borough Park General Hospitals of Brooklyn; Director Brooklyn Diagnostic Institute; formerly Professor of Materia Medica College of Dentistry, University of State of New Jersey; Professor Clinical Chemistry, Jersey City College of Pharmacy; Instructor of Medicine, New York Post Graduate Medical School and Hospital; Attending Physician Wyckoff Heights and Unity Hospitals; Paul B. Hoeber, Inc., New York, N.Y.; Price \$7.50.

The description of each drug occupies from a quarter of a page to perhaps three quarters of a page — giving the essential information concerning the drug in question. The various chemicals are described without price only comment. For example: If one wishes to know what Alvesen is he turns to page 269 and finds it is a composition of alkaline salts with sodium chloride manufactured by Burroughs Wellcome, or if he wishes to know what Kaosyl is, he turns to page 544 and finds that it contains colloidal kaolin, psyllium, bismuth, sub-carbonate, magnesium oxide, precipitated calcium carbonate, and aromatics, manufactured by Columbus Pharmacal. This volume should be of considerable use to physicians.

PREVENTIVE MEDICINE AND HYGIENE: by Milton J. Rosenau, Professor of Preventive Medicine and Hygiene, Harvard Medical School; Professor of Epidemiology, Harvard University and the Massachusetts Institute of Technology; Formerly Director of the Hygienic Laboratory, U. S. Public Health Service with chapters upon Mental Hygiene by Abraham Myerson; Sewage and Garbage, by Gordon M. Fair; Vital Statistics by John W. Trask; Statistical Methods by Carl R. Doering; Conservation of Vision by Herbert Waite; Contraception by Eric M. Matsner; D. Appleton-Century Company, Inc.; New York and London.

This is a book of 1481 pages; the type is not large but it is easy to read. The sixth edition has been largely re-written from the fifth, much new material has been added and there have been changes on nearly every page. The book deals with subjects from automobile accidents to vaccinia and venereal diseases. The various sections are: Prevention of Communicable Diseases, Infant and Maternal Mortality, Conservation of Vision and Ocular Hygiene, Public Health Principles and Practice, Food, Air, Soil, Water, Sewage, Refuse Disposal, Vital Statistics, Statistical Methods, Industrial Hygiene, and Disinfection. This is an excellent book and every person at all interested in Public Health and Sanitation should have access to it. The printers' art is beautifully executed.

Southwestern Medicine

Printed by THE A. C. TAYLOR PRINTING CO., Phoenix, Arizona
Published monthly for the Board of Managers of the four constituent societies.

VOL. XX.

JANUARY, 1936

No. 1

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OUR SECOND YEAR

Starting the second year as editor of Southwestern Medicine, it is natural and perhaps wise that we should take inventory—especially at this season.

We have become more than ever imbued that a medical journal has certain definite functions, and the editor should see to it that the journal fulfills these functions.

Probably the first and most important function is to publish papers on new facts in medicine. Certain definite principles should guide the editing of scientific papers. It seems that since there is such a tremendous amount of material for physicians to read that the thought of each article should be expressed in the fewest possible words; then, too, when the space is limited and the papers are many, trimming several articles a little may make room for another. It matters not how excellent the author may be in boiling down his paper, nor how poor the editor, he can boil a paper down still more without impairing its meaning. Every author has had the experience of having written a paper and having boiled it down as much as possible, and then after a few weeks be able to go over it again and "boil it down" still more. Every writer needs a drastic critic. An author may think that he is spoiling his style by cutting out the excess words, but he should remember that his paper will be read by more persons if it is short and to the point than if verbose; then too, our libraries are being filled with stacks and stacks of magazines and it is not right that more paper should be used to express the thought than is absolutely necessary. We read each paper at least three times and usually four times; any alter-

ation of meaning is apt to be a mishap in proof reading rather than in editing.

The second important function of a medical journal should be to give its readers the facts about the business side of medicine. This we have endeavored to do not only through the reading columns but in editorials. We have taken the position that it is not our function to write papers on medical subjects and call them editorials. Notices of scientific meetings, legislation, and matters of similar interest perhaps belong in the classification of the business side of medicine. We believe our readers have a right to know what is being done and said in the various State Medical Associations and Journals about medical economics, legislation, and many other subjects not strictly scientific medicine.

A third function of the medical journal would seem to be that of the cultural side of medicine; giving the readers information upon what has gone on previous to the present in medical advancement properly belongs here. This we have endeavored to do by running chapters of medical annals of Arizona as we have been able to gather the data. We have been endeavoring to interest a person in New Mexico and another in El Paso County to do likewise for those sections. Perhaps we will have an announcement along this line in the near future.

A fourth duty of a medical publication is to carry an extensive news department. News items are of more or less general interest because physicians are interested in the doings of their confreres. More than that, the news items become historical data in the future. We have had the help of a few men scattered through the territory of El Paso County, New

Mexico and Arizona, but we haven't had nearly as much help as we should have, and as we hope to have this year. The best chronicler of a news item is the person who is the basis for the news item. If each person would appoint himself a committee of one to send us the news items that he can find in his territory, we would soon make this section of the journal most interesting and valuable.

A fifth function of a medical publication is to carry advertisements of products of special interest to medical men. We follow the custom of accepting only advertisements of proprietary products which have been approved by the Council on Pharmacy and Chemistry.

A sixth function of a medical journal is to keep its readers informed about new books. We have endeavored to give reviews of books coming to our desk that may help physicians to decide whether they wish to purchase one or another of such books.

THE REACTION IS COMING

Every action has its reaction, every effect its cause. There is no question but what the medical profession has been, and still is, receiving severe criticism from many sources and for various reasons; in addition a bold attack is being made upon the present system of medical practice in America with the idea of substituting an experiment.

I think none of us will deny the accusation that there has been much which could be rightfully criticised in, and among the medical profession and the practice of medicine; these have been magnified many fold by the opposers of the profession and by those who wish to make changes in the present system of practice. There has been much said against us which came through ignorance and misconception. It has become more or less popular to "pan" us.

The code of ethics which has been in existence for centuries, more or less closely adhered to during this time, has been attacked again and again as being antiquated and in need of changing.

The debates which will be going on this winter in educational institutions on the subject of State medicine are undoubtedly in the nature of propaganda to mold public opinion for State medicine.

We believe there is a real danger in these

debates because it seems that on first thought on reading the subject for debate nearly every layman sees only the affirmative side of the question. At least that seems to be the case with certain groups of students who have contacted us for the purpose of getting data upon the question for debate.

It is gratifying that one of the local schools which had elected to argue for State Medicine decided instead to take the negative after several of the students had talked with us on the subject.

If the individuals of the medical profession will do their duty this winter in presenting facts not only to the debaters but to the laymen who become interested because of having heard the debates, much public opinion will be molded in the right direction. There will be many individuals who will wish to know what their physicians think of the subject after they have once become interested through having listened to the debates. For these reasons physicians should inform themselves and have definite ideas to present those who make inquiry thereover.

The basis for the predication that a reaction is coming—and by the reaction we mean one favorable to the medical profession—are numerous. Within the year the Supreme Court of the United States sustained a decision of the Supreme Court of Oregon which took cognizance of the ethics of the dental and medical professions; the Court said that the legislature in making laws concerning medical and dental professions was not dealing with traders in commodities but with the vital interests of public health and with individuals who were treating bodily disease and that physicians and dentists have definite standards of conduct differing from those in the competitive market place.

Recently a Municipal Court judge in Chicago, in which a man was being tried for attempting to practice without qualifications, made the statement that quack doctors are death dealers and a menace in that they prevent ignorant, gullible persons from getting competent physicians; instead of being healers they are killers.

In the news items of the J.A.M.A. for November 30, it is reported that the Portland Better Business Bureau investigated certain men who were attempting to establish some sort of

a faking business in Portland under the name of the W. B. Mayo Laboratories and made a derogatory report upon them probably checking a racketeering game against the Oregon people.

We of the medical profession know that while we have some weak members among us, some who stoop to illegal and undignified practices, we are in the main an honorable and upright group of men working hard for long and irregular hours, striving to heal the sick and to carry on such investigations as possible in circumstances under which we labor to discover new truths about disease and how to conquer it. When we do find new truths we do not keep them secret for our own selfish advancement but do all possible to give them the widest dissemination. There are rare exceptions—proving the general statement to be true. On the other hand when a layman comes into possession of information which has, or which he thinks has value in curing a disease, he almost invariably attempts to conceal it and to profit from it.

The wonder to us is that the general public is not enthusiastically with us in our attempts at research. We need money, laboratories, experimental materials, experimental animals, assistance, time, economic security, and many other things which the public could readily supply. Germany in her hey-day attempted to provide her men of science with the fullest opportunities for pursuing their researches. The time may not come when the United States may be as liberal with her scientists as was Germany but certainly the time will come when the scientists will have the sympathy of the thinking people of the nation. If the profession can get through this year and have a favorable reaction created by the debates, and if we realize our opportunity and take advantage of it in every way there should be started an appreciation of the medical profession and its work which will grow to react most favorably upon mankind in years to come.

The members of the medical profession have a definite duty to perform. They should attempt to see that the debaters of the college and high school debate teams not only have the necessary facts on both sides of the question but rather should take the view that we and our profession have been on trial and that

while we are apparently coming through with flying colors we should do our best to create good impressions.

We should deal fairly and as openly as possible with the public and attempt to sell the idea to the public that we are being fair and open.

THE WISCONSIN PLAN

The medical economics committee of the State Society of Wisconsin has prepared a card which is loaned to physicians. The card is nine inches by 11.5 inches and is to be framed and hung in a conspicuous place in the physician's office. The card reads as follows: "TO THE PATIENTS: Your Doctor is engaged in the oldest and most humane of professions. He desires to promote, as well as to protect, the health of the persons and families who seek his care.

"If you feel that lack of funds stands between you and medical service, ask for a copy of our blank 'Your Health—Your Doctor.' When you fill this out, the confidential information you supply will enable you and your physician to make any necessary arrangement for needed medical care at a cost within your means."

The program calls for the patient giving his physician his financial report and standing as well as history of his illness and from this the physician graduates his charges according to the ability of the patient to pay. The idea is that all should have medical services and at a cost within their individual means. Propaganda has gone forth that there are many persons going without medical care because they are not able to pay for it. The Wisconsin plan is an endeavor to counteract the false propaganda. It is the belief of the Wisconsin State Medical Association that physicians are ever ready to give persons the needed care at the price the patient can afford to pay. The Society supplies each physician with blanks upon which a patient may give his financial status along with his obligations.

If this should prove to answer the medical economics question, it indeed would be simple.

Dr. H. K. Mulford, head of the Mulford Pharmaceutical House was honored with a dinner October 31, 1935 by a group of distinguished scientists in Philadelphia in honor

of his having completed 50 years of service in the pharmaceutical industry.

Dr Mulford was born October 10, 1866. He had schooling commensurate with college work. He started his career at the age of 18 in a drug store in Philadelphia operated by two men who later became widely known as teachers of chemistry Dr. Joseph P. Remington and Dr. L. E. Sayre. It was our privilege to have known Professor Sayre more or less intimately and a splendid gentleman and scientist he was. Dr. Mulford soon purchased the store and later took a course in pharmacy. Young Mulford was of an investigative turn of mind and soon began experimenting with and putting up special preparations. In 1890 he organized the H. K. Mulford Company featuring compressed tablets along with the usual run of pharmaceuticals.

Dr. Mulford deserves special mention for his work in diphtheria antitoxin and in developments in colloidal chemistry.

The Philadelphia College of Pharmacy and Science conferred upon him in 1918 the degree of Master of Science and in 1933 the degree of Doctor of Pharmacy. It seems fitting to extend congratulations to Dr. Mulford for his contributions to the advancement of medical science.

The American College of Physicians has its **annual meeting** in Detroit, March 2-6, 1936, under the presidency of Dr. James Alex. Miller of New York City. Dr. Charles G. Jennings of Detroit is in charge of clinics and demonstrations. The annual Convocation Oration will be delivered by Dr. Walter B. Cannon on "The Roll of Emotion in Disease." The presidential address is entitled "The Changing Order in Medicine." There will be about 50 papers by eminent authorities.

The American Board of Ophthalmology announces that examinations for the present year will be held in Kansas City on May 11 and in New York City in October. These dates coincide with the meetings of the American Medical Association and the American Academy respectively. All examinations and case reports must be filed at least 60 days before the date of the examination. Dr. Thomas D. Allen, Assistant Secretary, 122 South Mich-

igan Ave., Chicago, Ill., will supply information, syllabuses, and application forms.

The American Association for the Study of Goiter announces that at the **annual meeting** June 8-10, 1936, in Chicago, Ill., an award of 300 dollars and two honorable mentions will be made at the discretion of the Society for the best essay submitted on the goiter problem. The competing essays should not exceed 3000 words in length, must be presented in English, and a typewritten double spaced copy sent to secretary Dr. W. Blair Mosser, 133 Biddle Street, Kane, Pennsylvania not later than March 1, 1936.

UNITED STATES CIVIL SERVICE EXAMINATION: The United States Government is calling for applications for the position of Junior Graduate Nurse. This pays \$1620.00 a year. Examinations are given in Arizona at Douglas, Flagstaff, Globe, Nogales, Phoenix, Prescott, Tucson, and Yuma; and in New Mexico at Albuquerque, Las Vegas, Las Cruces, Raton, Roswell, Santa Fe, Silver City, and Tucumcari. The applications must be filed with the United States Civil Service Commission in Washington, D. C. not later than January 20th of this year.

The San Francisco Po'yclinic and Post Graduate College has planned an intensive two weeks course in abdominal surgery which should interest the physicians who are particularly interested in surgery. More detail will be found in the advertising columns.

The Dallas Southern Clinical Society is again offering its annual post graduate course; the date is March 16-19. Outstanding men of the nation will be lecturers. Further details on this will be found in the advertising columns.

NEWS ITEMS

Dr. and Mrs. Charles Ploussard of Phoenix attended the Rose Bowl game on New Year's Day.

Dr. and Mrs. M. L. Kent of Mesa had as their guests during the holidays Dr. and Mrs. William Tindale of Salt Lake City, Utah.

Dr. and Mrs. W. W. Wilkinson, 925 East McDowell Road, Phoenix, opened their home to their friends for a watch party for New Year's Eve.

Dr. B. B. Moeur visited Tucson during December

to attend a meeting of the Board of Regents of University.

Dr. W. O. Sweek of Phoenix, member of the Board of Regents of the University, attended a board meeting in Tucson in the early part of the month.

Francisco Monroy of Tempe, recently died at the advanced age of 95 years. He was a relative by marriage of Dr. Walter W. Jones, an English physician, who was prominent in early Arizona history.

Dr. Norman A. Ross, county physician of Maricopa county, addressed the Buckeye Woman's club December 14th upon the subject of the county physician's work.

Springerville, Arizona, is getting a new 14 bed community hospital constructed by the municipality of Springerville.

Dr. C. E. Duvall of Tucson, Arizona, had his license to practice in Arizona revoked by the State Board of Examiners at a special meeting on October 8. This revocation was not based on the physician's conviction in Federal court, but on evidence presented to the board at a hearing unrelated to the federal prosecution, stated Dr. Patterson of the State Board of Examiners.

Dr. John S. Chase, who has been in charge of the eye, ear, nose and throat clinic at Whipple for more than a year, has been transferred to a veterans' institution in Los Angeles.

Dr. R. D. Kennedy has been elected chief of the staff of the Gila county hospital.

Dr. Cyril M. Cron of Miami, was named vice president of the Gila County Hospital.

Dr. Nelson D. Brayton of Miami, has been elected secretary of the Gila County Hospital. Dr. Brayton has also been elected chairman of the Globe-Miami boxing commission.

Dr. and Mrs. H. T. Southworth of Jerome, Arizona, were in Phoenix for a short stay in December.

Dr. Clarence Gunter of Globe, Arizona, was in Phoenix during the holiday season.

Dr. H. T. Bailey of Phoenix, Arizona, announces his return to practice with offices at 1022 Professional building.

Dr. R. W. Hussong, city health officer of Phoenix, has the personnel of his department fitted out with uniforms with the lapel of the coat bearing the insignia "City of Phoenix Health Department." While the uniform is not compulsory, it is expected that all members of the department will be wearing them.

Dr. Mayo Robb of Phoenix, went with Sen. James J. Couzens of Michigan to Washington in the Senator's private car in order to treat en route a cold in the Senator's throat.

Drs. W. E. Platt, G. W. Langdon, and J. W. Morris of Safford, Arizona, were called in by the county attorney to investigate the death of a young married couple whose bodies were found in their house after it had burned to the ground.

Suspicion was that the couple had met with foul play.

Dr. A. C. Kingsley of Phoenix addressed the Arizona State Nurses' Association, District No. 1, at the St. Joseph's Hospital on the subject of "Newer Phases of Psychiatric Nursing."

Dr. Harry B. Stokes of Tucson is affiliated with the Thomas-Davis Clinic—practice limited to ear, nose and throat work.

Dr. W. A. Franklin of Globe, Arizona, is president of the Globe Rotary club.

Dr. Fred G. Holmes of Phoenix is president for 1936 of the Phoenix Kiwanis club.

Dr. Louis P. Luffy, recently surgeon-in-chief of the United Verde Mining Extension Company of Globe, has moved to Phoenix and opened offices in the Professional building.

Mrs. Edith Clarke Perkins, wife of Dr. Charles F. Perkins of Wickenburg, died December 27 of a heart ailment. Dr. and Mrs. Perkins moved from Miami, Arizona to Wickenburg in 1933. The newspaper accounts state that she had made actual arrangement for her own funeral.

Governor and Mrs. B. B. Moeur entertained their daughter, Mrs. James M. Hamilton and her three children during the holidays with a family reunion at the Tempe home.

Dr. Edwin F. Winegar announces he is again in Phoenix for the winter with offices at the Westward Ho Hotel. Dr. Winegar is an ear, nose and throat specialist connected with the Illinois Central Railroad Hospital of Chicago.

Dr. and Mrs. Garland B. Couch have gone to Los Angeles for an indefinite stay following a residence of 45 years in the valley. Dr. and Mrs. Couch have been married over forty years.

Dr. G. P. Van Marel of Glendale, was elected delegate to the state convention of Townsend clubs held in Phoenix during December.

Dr. Clark B. Devine, psychiatrist at Whipple veterans' hospital for the last ten years, has recently been retired on a pension.

Dr. B. B. Moeur, Governor of the State of Arizona, has been honored by having the radio towers on the Industrial Arts building at the Arizona State Teachers' College, named the B. B. Moeur Towers.

The Graham County Medical Society had a meeting on the 18th of December in which "The Effects of Radium and X-ray on Pregnancy" were discussed.

Joseph Lentz, son of Doctor and Mrs. William Lentz of Phoenix, Arizona, who is studying medicine at Stanford University in his senior year, has passed the first installment of the national medical board examination; he graduates next June and at once enters a year internship at the City-County Hospital of San Francisco. He spent the holiday season with his parents.

Dr. R. W. Hussong, city health officer for Phoenix, recently made a report upon his first six months incumbency of the office. Dr. Hussong

is the first full time health officer Phoenix has had. He seems to have gone into the task of making Phoenix a healthier place in a most up-to-date manner. He has examined food handlers, eating places, soft drink stands, markets, grocery stores, etc. Five milk distributors and one milk plant were forced to discontinue because of unsanitary conditions. A number of persons were forbidden to handle food. During the coming year his department will broadcast programs over KTAR.

Dr. Frank J. Milloy is a member of the Board of Health for the City of Phoenix and is partially responsible for the good work being done by the health officer.

Cuthbert Fahlen, who graduates in medicine at Stanford University next June, has been with his parents, Dr. and Mrs. Fred T. Fahlen in Phoenix, Arizona, during the holidays.

Dr. David Davis obtained judgment in a \$50,000.00 mal-practice suit against him. The trial took nearly three weeks. The jury was out two and one-half hours in deliberation and returned with a verdict for Dr. Davis. A physician brought in from California testified for the prosecution. A considerable number of physicians of Phoenix testified for the defendant, including the personal physician of the man who brought the mal-practice suit.

Dr. Robert Flinn addressed the regular meeting of the Phoenix Woman's Club during December on the subject of heart disease.

Dr. Gypsie J. Dobyns, who is connected with the Arizona State Hospital, was married early in the month of January to Miss Virginia Jane Herron of Salinas, California.

Dr. F. L. Reese got his picture in the Arizona Republic by being late at a service club, and having to sit in a high chair to eat his luncheon. Had we access to the Republic's morgue, we would run this picture.

The President's Ball to raise funds for Infantile Paralysis sufferers for Globe, Arizona, is to be held January 30. On the various committees are: Drs. W. A. Franklin, R. D. Kennedy, Clarence Gunter, A. B. Ingels, W. A. Holt, T. C. Harper, and G. Morris.

Dr. George A. Hays was in Tucson for a few days in the early part of the month conferring with Dr. Carl Meyer, director of research for the Hooper Foundation, where a training center for health workers is to be established under the Social Security act.

The Maricopa County Medical Auxiliary met at 727 Encanto Drive January 6, the home of Dr. Carlos C. Craig. Mrs. C. S. Vivian was speaker of the evening on the subject of Public Health Service and Its Development in Arizona.

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.
Director New Mexico State Bureau
of Public Health

The first conference of New Mexico's District Health Officers was held November 7, 8 and 9 at Santa Fe with every health officer in attendance. It is something new in our state for problems of public health administration to be discussed with every section of the state represented in the discussion. Emphasis was laid upon the intention of the state office to decentralize administration just as far as this can be done within the framework of our present state laws and the requirements of the National Economic Security Act. Dr. Platt W. Covington, western representative of the International Health Division of the Rockefeller Foundation, and Dr. W. B. Coffey, chief surgeon of the Southern Pacific Railroad, addressed the conference expressing their interest in the New Mexico Health District Act and their belief in the value of the service which our specialized full time health officers can give. Dr. Coffey was accompanied by Dr. Chas. A. Thomas of Tucson.

Health officers present were: Dr. E. F. McIntyre, Santa Fe, District 1; Dr. E. B. Beaver, Gallup, District 2; Dr. James R. Scott, Albuquerque, District 3; Dr. C. W. Gerber, Las Cruces, District 4; Dr. W. W. Johnston, Las Vegas, District 5; Dr. O. E. Puckett, Carlsbad, District 6; Dr. Frank W. Parker, Silver City, District 7; Dr. Julian O. Long, Los Lunas, District 8; Dr. Frank C. Diver, Raton, District 9, and Dr. L. A. Dewey, Portales, District 10.

Vitamin B in Pinto Beans: Our congratulations go to Mary L. Greenwood of the New Mexico Agricultural Experiment Station for her research into the vitamin B content of pinto beans. She finds that 0.095 gram of beans contains approximately one Sherman unit of vitamin B. This makes our local bean even richer in this vitamin than rice polishings and nearly as rich as wheat germ. When occasion demands an increase of vitamin B in the diet, as during pregnancy and lactation, physicians can prescribe pinto beans with confidence. Miss Greenwood has extended her researches to the methods of preparing pinto beans to give maximum palatability—beans that "melt in the mouth"—and even if no soft water is available she can show us how to secure this sort of bean.

Toxoid: One Dose or Three? Our Canadian colleagues have raised the question as to whether three doses of plain toxoid should not be preferred to a single dose of alum toxoid. The Canadians point out that a negative Schick test is not an absolute guarantee of immunity to diphtheria and that a more accurate estimate of immunity is to be had by measuring the antigenic response in

the development of antitoxin in the recipient's blood stream. Using this method they find that a single dose of alum toxoid is less effective than three doses of unmodified toxoid. The number of experimental observations is admittedly small and the conclusion is thus not on such a sound statistical basis as is the evidence from Alabama where in something like 1000 children receiving a single dose of alum toxoid 95 per cent were Schick negative after an interval of from three to six months.

It is agreed that a single dose of alum toxoid is more effective than a single dose of unmodified toxoid and for some reason no comparison has been made between the effect of two doses of alum toxoid and three of plain toxoid or between the effect of one dose of alum toxoid and two of plain toxoid. Perhaps the private practitioner may decide to give three doses of unmodified toxoid to his patients who can be relied upon to return for the full course of treatment while the health officer who must travel long distances to reach his rural schools and never expects to find the same group of patients at successive visits will conclude that a single dose of alum toxoid is practically of equal value and far more economical.

Care of Indigent Sick: Twice in recent months the opinion has been expressed in this journal that the indigent citizens of the United States are specially favored in the facilities they enjoy for medical care. The writer, having lived in three European countries and having visited several others, experienced a good deal of astonishment both at the confidence with which this assertion is made and at the fact that it has so far gone unchallenged. A little research makes it clear that bases of comparison in this field are not easily found. It may be that this rather than lack of factual data makes it possible for us to possess rather positive opinions. Medical care includes more than the services of a physician and must be measured by quality as well as by amount.

There is at least one well loved American physician who is not entirely satisfied with the present situation in this country. Following are a few quotations from Dr. Hugh Cabot's recent book:

"If we assume . . . that adequate medical service at the present time requires that there shall be available to everybody reasonable access to modern methods of diagnosis and treatment, it may readily appear that there are very large groups in the community for whom such service is not available. (p. 43).

"If, on the other hand, we are shocked by the very large number of persons in this country, who, at the present time, are perfectly obviously in need of medical service which they do not receive because they cannot afford it, then we need not be too precipitate in attempting to cut down our numbers, and thus insure ourselves against proper care of the sick. (p. 199).

"I have already presented evidence, which seems to me pretty convincing, that there is, in fact, a

very handsome number of people in this country who are actually suffering from want of medical care. I cannot take seriously the suggestion that physicians would be satisfactory witnesses upon this point, since I cannot conceive how physicians are to be aware of the amount of illness existing in patients whom they never see." (p. 236).

But Dr. Cabot makes no invidious comparisons. For the following the writer takes personal responsibility, knowing that he will probably be skinned alive and what is more important realizing that any available basis of comparison will be inadequate. With that proviso let us consult a book resulting from a series of "International Studies" made by Sir Arthur Newsholme for the Milbank Memorial Fund. It must not be thought for a moment that the author of this book is satisfied with the care of the sick in Europe. Tout au contraire. But this is in itself a safeguard against his having selected his facts in favor of the old world.

From his chapter on Hospitals and Medical Care. We quote:

"Great Britain.—Legally every necessitous person is entitled to gratuitous hospital treatment when on medical grounds this is needed. The hospital provision in the smaller poor-law infirmaries has been unsatisfactory. It is now improving. . .

"Ireland.—There is a more general provision of free medical treatment by the destitution authority in Ireland than in Great Britain, though the quality of this treatment in institutions does not, as a rule, equal that available in Britain. . .

"The Netherlands.—Municipalities must provide hospital treatment for the necessitous. . .

"Denmark.—There is an admirable system of municipal and county hospitals throughout the country. . . The charges represent only a fraction of the cost of this treatment, the balance coming out of local taxation.

"Sweden.—The hospital system resembles that of Denmark. . .

"Germany.—The communal authorities are required to provide hospital treatment for the poor. .

"Austria.—The hospital system is maintained by the taxpayer, subject to what can be recovered from patients. . . There is a complete system of hospitals for the entire country."

And so on! It is not necessary to comment here upon the hospitalization of the indigent in New Mexico. I had intended to quote also from this report on the treatment of indigents with tuberculosis and with venereal disease but space will not permit. Sir Arthur's book is available to any reader who would borrow it. Let me offer just one more factual criterion: In New Mexico, in 1934, 31.4 per cent of our deaths occurred without medical attendance in the fatal illness. And that in a year of federal medical relief!

1. Bulletin 232, Agricultural Experiment Station of New Mexico College of Agriculture, State College, N. M.
2. Bulletin 231, idem.
3. Fraser, D. T. and Hapern, K. C. Diphtheria Toxoid: A Comparison of One Dose of Alum Precipitated with Three Doses of Unmodified

Toxoid. Canadian Pub. Health J. 26:469 (October) 1935.

4. McKinnon, N. E. and Ross, Mary A. The Reduction of Diphtheria Following Three Doses of Toxoid. J. A. M. A. 105:1325 (October 26) 1935.

5. The people in this country have enjoyed the best medical care of any peoples on the face of the earth. Southwestern Medicine, 19:265 (August) 1935.

6. Cabot, H. The Doctor's Bill. Columbia Univ. Press, 1935.

7. Newsholme, Sir A. Medicine and the State. Williams & Wilkins, 1932.

THE SOUTHWESTERN MEDICAL ASSOCIATION

PRESIDENTIAL ADDRESS

During the past quarter of a century much progress has been made in the teaching and practice of medicine, with a remarkable development in this section of the country. Has our association kept pace with this progress in the character of our annual meetings?

Last year in an endeavor to improve the value of our association, the constitution was revised. It will be voted upon at this meeting. The name of the association is to be changed to The Southwestern Medical Association, which is shorter and doubtless more appropriate.

The objects of this association as given in the constitution shall be the advancement of the science and art of medicine, the promotion of better methods of treatment, the encouragement of professional and social relations among members of the profession in the Southwest, by annual clinical conferences, scientific exhibits, clinics, publications and other means.

The State and other local medical societies are vital to our profession, in upholding the standards of medical care. They have a definite purpose and duty to perform in their respective sections, as well as being units of our National Association.

Our association in no way conflicts with any of the medical societies in the Southwest. It does, however, have the same high ideals in the advancement of the science and art of medicine, and the promotion of better methods of treatment. Its entire purpose, then, is to combine the strength of all the profession in the Southwest, to accomplish something more than the individual units can do.

We well know that we cannot stand still; we either go forward or backward. The practice of medicine is a progressive science. By the continual development of scientific research and study, new facts, methods of treatment and technique are continually occurring. It is therefore necessary,

if we wish to keep abreast with approved methods, that we discuss the new facts and theories, with the foremost teachers and leaders in the profession. There are many, who cannot leave their practices to visit the leading medical centers or take the post-graduate courses they desire. By combining our forces, however, some of the leaders of the profession can be brought to our section for a few days session and a great deal of benefit be derived therefrom.

As physicians, we are human, and for various reasons, apt to lose our enthusiasm and ambition to keep up with the continual progress. The inspiration received in attending these annual meetings, is well worth the sacrifice of time and loss of practice, and should be an obligation each physician owes to himself, his patients and the profession.

Numerous other sections of our country have found it advantageous to develop annual clinical conferences or intensified post-graduate courses, bringing in many eminent men to conduct them. The benefits derived from a few days spent at these meetings would take weeks or months to acquire, if one attempted to obtain them at the various medical centers.

There appears no good reason why this section of the country should not have an outstanding annual clinical conference, with clinics and scientific exhibits. It should not be just another medical meeting, but one composed of such outstanding men who will attract all the profession in our district, as well as those in outlying sections. El Paso is an ideal location, with its abundant supply of medical material, its active local medical organization, its generous hospitality and adequate accommodations. It cannot, however, carry this burden alone. The FULL COOPERATION of all the profession in our section IS REQUIRED, as well as each individual unit. The active membership committee of the past two years has obtained many new members, but has not received whole hearted support. The principal reason for this, I believe, is that we have not had a definite program to offer the prospective new members.

Our programs, in the past, have floundered around from one type to another. The present one, however, is built entirely around outside guests, all eminent men, recognized as leaders in their respective fields. The scientific exhibits are also an interesting part of our program and add a distinct educational value. The commercial exhibitors too deserve our consideration, since they are helping to finance our meetings.

The success of this meeting should prove a great asset to us in helping to solve our problem. By having such programs as our committee has arranged for this meeting and the assurance of similar ones each year, there should be no trouble in increasing our membership as well as the

attendance. With these two increased, we should be able to attract a sufficient number of commercial exhibitors, to cover the expense of our scientific exhibits.

Our annual meeting is the foundation upon which our association is based. Therefore it must be an outstanding one, as the entire success of our association depends thereupon. To accomplish this goal and insure a more permanent basis for our association, I would like to make the following recommendation: That our association take a definite stand in establishing annual programs, similar to the one we have arranged for this meeting, composed entirely of distinguished guest speakers, with clinics, clinical conferences, round-table discussions and scientific and commercial exhibits.

C. R. SWACKHAMER,
First Vice-President, presiding.

THE NEW PROGRAM

(PRESIDENTIAL ADDRESS)

JAMES J. GORMAN, M. D.

It is my privilege to close this twenty-second annual meeting and second annual Clinical Conference of the Southwestern Medical Association.

It is to the credit of the officers and committees who have borne the executive responsibilities of the Association through the trying years since 1929 that this Association, the bond of medical union in this great expanse of territory, has been held intact. It is to the credit of the Association that the officers have been cognizant of the changing thought in medical meetings, and that they have adjusted the program to meet the demands and desires of the members.

The officers of 1935, the El Paso County Medical Society, Dr. Cummins as Chairman of the Exhibit Committee, and the other committees are to be congratulated on the presentation of an excellent program. We feel indebted to the distinguished guests who have given so liberally of their time and ability to make this program a success.

In a vast district in which but few "natives" reside and in which the population has been drawn from all parts of North America, we are indeed fortunate that the foresightedness of our associates of 22 years ago saw the necessity for organizing the far distant and isolated districts in this beneficial Association known as the Southwestern Medical Association. No less an authority than our highly esteemed Dr. Mayo, who in speaking on the subject of where the practitioner of Medicine should get his information, states that attendance at Medical Society Meetings, where he will gain stimulating contacts with other physicians of all ages and exchange views on medical practice, is of first importance. The value of these contacts in addition to the medical teach-

ing should draw every physician in the Southwest to the annual meeting, and no one should deprive himself of this privilege.

We can announce our programs, we can invite your attendance in one or many letters, but it is your enthusiasm regarding the meeting on your return to your various homes that will double our attendance and yearly furnish more and more contacts that will be invaluable to us all.

It is the intention of the officers of the Association to provide the type of advanced medical education that is most desired by the majority. It is your wishes as indicated on the cards you secured on registration that will guide the Program Committee in its selection of a program. As our attendance grows, we should be able to provide even the smallest minority with its phase of the program.

And so as we pass to our business meeting to close this annual session, the officers of 1936 express their appreciation of the officers of 1935 for their earnest efforts in behalf of the Association.

We request of the membership of the Association that every effort be expended to increase our membership and attendance at our annual meetings so as to further promote the aims of this organization; namely, personal contact and medical education.

THE SOUTHWESTERN MEDICAL ASSOCIATION DEPARTMENT

The long period of efficient and unselfish service that W. Warner Watkins has served the Medical and Surgical Association of the Southwest as its Secretary-Treasurer has ended only because of his definite refusal to accept it again. Selfishly I am sure that every member regrets that his service as Secretary-Treasurer must be denied the Association. As his successor I wish to be one to publicly acknowledge his untiring services for the past 12 years, and to express deep appreciation for it. We can never pay him for his services so that our deep appreciation is all that we can extend him other than the assurance that his labors will never be forgotten. I hope the members of the Association appreciate the great disadvantage that his successor is placed in in the attempt to carry on the work that was so well done by Dr. Watkins. With the change of name to the Southwestern Medical Association and the adoption of the new Constitution, the Southwestern Medical Association is operating with changes of policy. The permanent meeting place of the Association is El Paso and the type of program is three days and nights of intensive post-graduate lectures and clinics delivered by distinguished professors brought from Universities and medical centers from different parts of the

North American Continent. This type of program has grown in popularity throughout the United States to where there is scarcely a section of the country at this time that is not covered by such a program. It would seem that because of our remoteness from the great medical centers that it is especially practical for our Southwestern district. If the physicians of the Southwest will attend this annual clinical conference each year, they should be well informed in the new things medical, and be familiarized with modern methods of medical and surgical teachings.

By adopting this type of program our Association is not just "another" medical society. We are hearing a great deal today about too many medical societies. With the old type of meeting there was the possibility that we were infringing upon the rights of the State Medical Association of Arizona, New Mexico and Texas. We trust that by going to this type of meeting that, not only will it increase the membership and the advantages of the Southwestern Medical Association, but that it will serve to increase the interest in our respective State Associations.

Though we are definitely launched on the post-graduate type of program for this Association, your officers are taking no arbitrary stand and solicit your opinions and advices on the programs of the future. Study the program announcements as they come to you, from month to month, and communicate to us your criticism, either as to policy or detail. It is our desire to provide the best program that our financial resources will permit and the type that is most desired by the membership.

We have already started on the 1936 meeting, the program committee has been appointed, our membership drive has started, and if you desire, as we do, that the 1936 meeting shall be bigger and better than previous ones, won't you express it by the early renewal of your annual dues for membership.

ORVILLE E. EGBERT,
Secretary-Treasurer.

DEPARTMENT OF EL PASO COUNTY MEDICAL SOCIETY

EL PASO COUNTY MEDICAL SOCIETY: The El Paso County Medical Society passed the year 1935, Dr. B. F. Stevens, President, Dr. K. D. Lynch, Vice-President, and Dr. L. O. Dutton, Secretary-Treasurer, having done two or three outstanding pieces of work.

The society aided the investigator of the State Board of Medical Examiners in detecting and prosecuting a number of violators of the medical practice act.

The society also formulated plans for and put into operation the Central Medical and Dental Service. This is a bureau designed to aid a bet-

ter financing of medical and dental services for the low income group. Results to date are encouraging.

The committee on medical relief work supervised the expenditure by the various relief agencies of funds for medical service to a total of about \$30,000—paid to physicians.

The Society acted as hosts to the Medical Association of the Southwest for the annual meeting.

The following new members have been admitted to the Society: Drs. Erich Spier, Gerald Jordan, Z. Causey, H. T. Hatfield, G. Arnold Stevens, and Wilmer Adams.

Officers for 1936 are: Stephen Schuster, President; George Turner, Vice-president, and L. O. Dutton, Secretary-Treasurer.

HOTEL DIEU: Within the historic walls of El Paso's oldest hospital a splendid program of modernization is under way.

The most important step is the incorporation of a fine x-ray plant. This consists of a Kenotron x-ray unit with complete radiographic and diagnostic range up to 350 milliamperes at 100 kilovolt peak. The equipment is completed by a full-length Bucky diaphragm and the most complete shock-proof fluoroscopic arrangement available. This affords a flexible, powerful and safe diagnostic x-ray and fluoroscopic unit. The Kenotron tube-type rectification, giving full wave power, affords at higher altitudes the best system yet devised for full-range work without a step-up power unit.

The operating rooms were painted. Alcohol dispensers were provided, and a spinal manometer added to the equipment.

The O. B. department was equipped with an incubator and hot and cold water sterilizers. New sterilizers were also provided for the central service room.

The dietary department is now giving splendid service under its able dietitian. A new stove and a large refrigerator have been purchased for the main kitchen. Steam tables have been ordered. An electric dumb-waiter is being installed as a part of the plan for central service whereby all trays will be served directly from the main diet kitchen. Requests for special diets are far more numerous than they were a year ago.

The obsolete plumbing system is being removed and a new system installed throughout the institution.

A self-contained Freon condensing ice unit for the making of ice replaced an old ice machine. Ice is supplied throughout the building, and coils for refrigerating the main kitchen ice-box and all diet kitchen boxes are provided.

HOTEL DIEU NURSING STAFF: Sister Agatha, R.N. Superintendent; Sister Eligius, R.N.B.S. Director of nursing school; Sister Berenice, R.N. Supervisor, O. R.; Sister Josephine, R.N. Hall Supervisor and S.P. Dept.; Sister Angela, R.N. Hall

Supervisor; Sister Anna, R.P. Pharmacist; Sister Teresa, B.S. (A.D.A.) Dietitian and Food Administrator; Miss Z. Talty, R.N. Asst. Director and Instructress; Miss I. Glaser, R.N. Instructress of Nurses; Miss C. Munster, R.N. Supervisor, O.B.; Miss E. Campbell, R.N. Hall Supervisor; Miss H. Laird, R.N. Supervisor, Central Service Room; Miss B. McIntosh, R.N. Anesthetist; Miss N. Smith, B.S. Record Historian; Mrs. A. Armstrong, R.N. Night Supervisor; Mr. Gamere, Technician.

The staff officers are: Dr. W. E. Vandever. President; Dr. J. L. Green, Vice-President; Dr. R. Thompson, Secretary-Treasurer.

The Catholic Sisters in charge of Hotel Dieu have taken another step recently which is of great benefit to the physicians and surgeons of El Paso, namely: Donating the use of the auditorium in their Nurses Home for the semi-monthly meetings of the El Paso County Medical Society.

PROVIDENCE HOSPITAL: Providence hospital in El Paso reports material improvements in its physical plant during the past year. Crank beds of the finest type with corresponding quality of mattresses and blankets have been installed. The now completed program of redecoration of walls, floors, and ceilings throughout the entire hospital has added greatly to the attractiveness of the interior. A new obstetrical delivery room with a splendid system of indirect lighting has been created out of the old second-floor operating room. Together with the modern heating plant just installed, the roofing program now under way will soon add the final touch to the reconstruction.

THE MASONIC HOSPITAL of El Paso reports that under the able management of Mr Clifford A. Wagner, Superintendent, in charge now for over a year, marked improvements in every phase of hospital activity has taken place. Thanks to the generosity of Dr. George Turner, a complete x-ray, General Electric unit with fluoroscopic attachments for vertical and horizontal use Bucky diaphragm and the most modern type of dark room have been installed on the top floor of the hospital.

In addition, a complete rehabilitation of the entire top floor has taken place with outstanding improvements in the surgery, including an additional operating room, and improved sterilizing equipment.

Improvements also have taken place in the delivery room, located on the same floor. The hospital can indeed now say with pride that it is in better working order than it has ever been.

Staff officers for this year are John A. Hardy, Chief of Staff, and Wickliff Curtiss, Secretary.

THE EL PASO CITY-COUNTY HOSPITAL has nearly completed its rehabilitation program in which two new wards, one for each sex, were constructed, airy and clean, green terraza floors, green tinted walls and cubicles for the sicker patients. Up-to-date and modern equipment for sterilization

of ward utensils has been provided. Above the wards are a large operating room, a small operating room, and a cystoscopy room with the necessary utility rooms. The operating room has tile floors, green tinted walls, a multi-beam light over the operating room, and a gallery for spectators.

In the basement of the two new wards, is the City-County clinic which formerly was in the court house. There are also sleeping quarters for the house officer who is on emergency call, and a modern autopsy room with excellent lighting, ventilating, and cold storage accommodations.

Connecting the new building with the old is a long corridor. The old building has been entirely re-vamped and re-decorated and appears almost like a new building. The basement floor now contains offices for the operating staff—admitting officer, historian, hostess, and superintendent. Also there is a physio-therapy division with certain rooms given over to orthopedic surgery and skin clinics. The first floor has 22 pediatric beds, all bassinet or youth type. The ward is divided so that there are separate wards for different types of cases. In the east wing of this floor is the obstetrical department equipped to take care of all sorts of obstetrical complications. On the east side of the corridor to the new building is a kitchen which also has been made to look like new, and across the corridor is a modern refrigeration plant. On the second floor of the old building is the laboratory and x-ray departments.

Much of this achievement is due to the indefatigable efforts of the board members: Dr. Hugh White, President; Dr R. B. Homan, Sr., Mr. Charles Given and Mr. Reuben Momsen, Vice-presidents; Mrs. Paul Gallagher, Secretary, and Mr. J. D. Foster, Treasurer. Mr. Walter Scott, who served until recently, also deserves commendation. The Commissioner's Board also deserve much gratitude for staunch and loyal support. Doctor Butler and his wife and staff deserve much praise for keeping the hospital running smoothly during the period of reconstruction.

The hospital and clinic are now completely staffed—medical, surgical, dental, out-patient department, and hospital service. Miss Stephanie Kraker is operating room nurse. Miss Ruby Decker is head of the orthopedic department. Mrs. Elizabeth Abbott is in charge of the out-patient department. There are four internes living in the hospital and constantly on duty. In connection with the hospital there is a tuberculosis department with 30 beds and an isolation ward of 21 beds. The total bed capacity is 196 and eight bassinets, an increase of 40 beds and eight bassinets over the old hospital.

The Chief of Staff is Dr. F. O. Barrett, Vice-Chief Dr. Ralph Homan, and Secretary Dr. Clay Gwinn.

THE MEDICAL AND SURGICAL ASSOCIATION OF THE SOUTHWEST

Minutes of the 22nd Annual Meeting at El Paso. November 20-23, 1935.

Meeting of the Executive Committee: The Executive Committee was called to meet at 8:00 P. M., November 20th at the Cortez Hotel. There were present Dr. C. R. Swackhamer, Vice President and Acting President; Dr. J. G. Moir, Second Vice President; Dr. J. J. Gorman, President-elect; Dr. W. S. Jamison, Chairman of Board of Censors; W. Warner Watkins, Secretary-Treasurer.

The minutes of the Executive Committee meeting of January 12th were read and approved. The appointment of committees was the first order of business and the following were appointed.

Nominating Committee: Dr. W. W. Waite, chairman, Dr. W. A. Holt of Globe, Arizona, and Dr. H. A. Miller of Clovis, New Mexico; (subsequently Dr. Woolston of Albuquerque was appointed when Dr. Miller failed to arrive at the meeting).

Committee on Necrology: Dr. H. T. Safford, Sr., El Paso, chairman; Dr. J. M. Greer, Phoenix and Dr. M. B. Culpepper, Carlsbad, New Mexico.

Committee on Resolutions: Dr. J. W. Laws, El Paso, chairman; Dr. J. M. Meason, Chandler, Arizona and Dr. H. T. Hogeland, Cananea.

The Executive Committee then considered the proposed constitution and certain changes which might be made to conform with their discussion at the January 12th meeting. It was decided to recommend to the general business meeting the adoption of the constitution as proposed last year and sent out to the members with one slight change in Section IV, Article 3, by adding the words "for one year," making the section read as follows: "Honorary members shall be physicians and surgeons who have achieved distinction in medicine or surgery. They shall be elected by unanimous vote of the active members at an annual meeting; they shall not pay dues and shall receive the official publication of the Association without charge for one year."

It was also decided to recommend the revision of Section I, Article 3 of the By-Laws by striking out the following sentences: "Any member who does not already receive the official publication (Southwestern Medicine) by virtue of membership in some other organization shall be entitled to the journal through his membership in the Association." This will leave the matter of sending the journal to members not already receiving it at the direction of the Executive Committee.

There was a long discussion on ways and means of advancing the interests of the Association. The letter of the Secretary-Treasurer to the Nominating Committee advising them that another man must be secured for this office was presented and the reasons for this explained by Dr. Watkins. The Executive Committee after these explanations reluctantly concurred in the decision of the Secretary-Treasurer not to accept renomination for this office. The Executive Committee adjourned to meet immediately following the closing business session of November 23d.

General Business Meeting, November 21st

At this meeting the report of the Executive Committee on the constitution was presented as follows:

This Committee has again gone over the constitution as revised and presented at last year's annual meeting and sent out by mail to every member some months ago. They recommend the adoption of the constitution as printed with one slight revision: namely, The addition to Section IV, Article 3, of the words "for one year."

The chief changes from the old constitution are the following: (1) Change of name, (2) Enlarging the field of membership by change in classification, (3) Stipulation of El Paso as the regular meeting place of the Association. There are reasons for each of these changes which bear on the future development of the organization.

The By-Laws have already been adopted, but the Executive Committee recommends the revision of Section 1 of Article 4, of the By-Laws by striking out the last sentence, beginning "Any member," etc.

This report of the Executive Committee was presented as a resolution for adoption. The motion to adopt the report of the Executive Committee, carrying with it the adoption of the constitution was carried unanimously by motion duly seconded. This put into immediate effect the constitution as adopted and completed the re-organization of the Association under its new name of "Southwestern Medical Association."

This being the only matter of business announced for this meeting, it adjourned to meet immediately after the luncheon on Saturday, November 23d.

General Meeting of Saturday, November 23d

The meeting was called to order by the Acting President, Dr. Swackhamer who introduced Dr. James J. Gorman of El Paso, the President-elect. Dr. Gorman took the chair and gave a short address, outlining the future program of the Association.

The report of the Secretary-Treasurer was then called for. Just before calling for this report Dr. Gorman announced that Dr. Watkins had been forced to advise the Association that he could not again accept nomination to this office and suggested a vote of thanks for the years of service rendered. This was given in a very hearty and cordial manner. Dr. Watkins thanked the Association for its expression and read his report.

The report of the Nominating Committee was then called for and given by Dr. Waite with the following names for the several offices: President-elect, Dr. C. R. Swackhamer; First Vice President, Dr. Leroy Peters, Albuquerque, New Mexico; Second Vice President, Dr. H. T. Hogeland, Cananea, Sonora; Secretary-Treasurer, Dr. Orville Egbert, El Paso, Texas.

Motion was made, seconded and carried that the Secretary-Treasurer cast the unanimous ballot of the Association for the officers named. Secretary announced that this was done.

Drs. Swackhamer, Hogeland and Egbert were called on for brief remarks. Dr. Peters was not present at the meeting.

Report of the Committee on Resolutions was called for. Dr. Ralph Homan was asked to present one resolution which they had approved and he read it as follows:

WHEREAS, pulmonary tuberculosis remains one of the greatest causes of death in this country, accounting for the loss of 59.5 lives per 100,000 population in 1933, and

WHEREAS, this economic depression has caused conditions of poverty, exposure, etc., which are conducive to an increase in the incidence of this disease, and

WHEREAS, there are entirely too few medical colleges which have departments devoted exclusively to teaching diagnosis and treatment of diseases of the chest, and

WHEREAS, adequate post graduate instruction in diagnosis and treatment of tuberculosis is available only to a select few, and

WHEREAS, the program of the National Tuberculosis Association stresses largely the sociological rather than the medical aspect of tuberculosis.

BE IT THEREFORE RESOLVED that the Southwestern Medical Association go on record as favoring the establishment of a section on Diseases of the Chest at the Annual Meeting of the American Medical Association, and,

BE IT FURTHER RESOLVED that the secretary of this Association be instructed to send a copy of this resolution to the President and Secretary of the American Medical Association and to the Editor of the Journal of the American Medical Association, and to the Delegates to the American Medical Association of the three component states of Arizona, New Mexico and Texas.

Motion was passed unanimously that this resolution be adopted.

The Resolutions' Committee through Dr. Meason presented the following report:

We, your Resolution Committee feel, so thoroughly convinced of the wisdom of this Association in adopting the present plan of scientific presentation, so completely overwhelmed by the hospitality, generosity, and indomitable energy of the El Paso County Medical Society and so thoroughly satisfied by the generous and delightful entertainment of the visiting ladies, by the Medical Auxiliary, that we offer the following resolutions and move their adoption:

FIRST, BE IT RESOLVED, That it is the consensus of opinion of this Association that, by far, we have attained a most excellent degree in the presentation and elucidation of scientific medicine and surgery, that, we have received the latest mature facts, thoughts and conclusions of our profession from the minds of masters, that we feel a sense of sincere gratitude toward our program committee and commend their wisdom, exalt their judgment and appreciate in the fullest their untiring energy and not in the sense of eulogy, but of deepest appreciation, say 'Well done, good and faithful servant.'

SECONDLY, That we feel generously rewarded in our selection of Vice President, C. R. K. Swackhammer, who has so ably, and on short notice, guided the Association so successfully and filled the breach, occasioned by the loss of our estimable President, David M. Davis, for the loss of whom, we are only compensated and reconciled by the thought, that he has advanced to a field of greater usefulness, and that the best wishes of the Southwest Medicine follows him, and we believe that the pinnacle of success will be his reward.

THIRDLY, That the officers of our Association, abundantly measured up to our expectation, and have reflected honor, dignity and material advancement upon our body, that the El Paso Medical Association has always lavished hospitality, extended the hand of good fellowship and made us so absolutely comfortable and contented that we are more than happy to call this "HOME," and that their better and most amicable halves, the Medical Auxiliary have crowned their fair and lovely heads with jewels most brilliant and alluring by their affable care and entertainment of our visiting ladies—and

FOURTHLY, As the cap-stone of these resolu-

tions, from the deepest depths of our well of appreciation, we draw full buckets of refreshing gratitude, and offer it as a token to the excellent masters, who have so ably and brilliantly presented the evidence on mature thought and proven facts in the science of medicine and surgery, that it is not amiss in all sincerity to declare that the names of Charles T. Stone, V. C. Hunt, Herman C. Bumpus, Albert Rowe, Isaac H. Jones, Enos Paul Cook, James C. Masson, and Louie A. Buie will go down in the history of Southwest Medicine. AND that these men will be remembered as the crowning factors in the success of the 1935 Assembly.

Respectfully submitted,

(Signed) J. W. Laws,
Jas. M. Meason,
Frank T. Hogeland.

This resolution was adopted unanimously.

Report of the Committee on Necrology was not forthcoming and the secretary announced that the following members of the Association had died during the preceding year: Dr. Charles G. Duncan, Socorro, New Mexico; Dr. T. T. Martin, Taos, New Mexico; Dr. J. A. Reidy, Albuquerque, New Mexico; Dr. Homer Powers, Rankin, Texas.

Report of the Board of Censors was called for and they announced the following applicants as having been approved by them for active membership:

Dr. Delphin von Briesen, El Paso, Texas
Dr. Erick Spier, El Paso, Texas.
Dr. L. R. Gaddis, Alamogordo, New Mexico
Dr. Clay Gwinn, El Paso, Texas
Dr. Chester D. Awe, El Paso, Texas
Dr. F. F. Dupree, Tucson, Arizona
Dr. H. P. Deady, El Paso, Texas
Dr. I. J. Bush, El Paso, Texas
Dr. G. Causey, El Paso, Texas
Dr. Maxwell S. Molloy, Isleta, Texas
Dr. Robt. B. Homan, Jr., El Paso, Texas
Dr. B. F. Stevens, El Paso, Texas
Dr. D. Flores Guerra, Nogales, Sonora
Dr. Luis Mercado, Magdalena, Sonora
Dr. Joaquin Rincon, Nogales, Sonora
Dr. Antonio C. Alcantar, Nogales, Sonora
Dr. Fernando V. Banda, Nogales, Sonora
Dr. J. A. Dailey, Mayhill, New Mexico
Dr. Jose Romo de Vivar, Nogales, Sonora

Motion was passed that these be elected to membership.

President Gorman announced that the executive committee would meet immediately following adjournment.

Adjournment sine die.

W. WARNER WATKINS,
Secretary-Treasurer.

BOOK REVIEWS

AN INTRODUCTION TO MEDICAL ECONOMICS. An Outline Prepared by the Bureau of Medical Economics, American Medical Association.

It seems that we must eventually have specialists in medical economics as we have specialists in various diseases of the human body. This little booklet of 108 pages is compiled as a foundation to those who may wish to prepare themselves to go deeper into the subject. It would be well if every physician would read this outline on the subject. It seems that sooner or later physicians

generally may have to express themselves for or against certain propositions in medical economics.

MEDICAL TREATMENT OF GALLBLADDER DISEASE: By Martin E. Reh fuss, M.D., Clinical Professor of Medicine at Jefferson Medical College, Philadelphia; and Guy M. Nelson, M.D., Instructor of Medicine at Jefferson Medical College, Philadelphia; 465 pages with 113 illustrations; Philadelphia and London; W. B. Saunders Company; 1935; Cloth, \$5.50 net.

The authors recognize gallbladder disease as the common disease of the upper right quadrant, responsible for a great deal of the ordinary indigestion of which patients complain. They also recognize that while many of the cases are surgical the largest number by far remain medical cases.

The book has been written from the standpoint of the medical handling of gall bladder disease. It is divided into 24 chapters dealing with such subjects as physical examination, duodenal intubation, x-ray examination, differential diagnosis, plan of medical treatment, metabolic problem, diet, infection problem and others.

On page 388 there is one paragraph of nine lines devoted to a lergy that states "In our experience allergy is more common in biliary and hepatic cases than any other type of digestive disturbance." Believing as they say they do it would seem that allergy of the gall bladder would at least deserve a chapter or two rather than one paragraph. Other than this there seems nothing to criticize.

The illustrations are excellent; the type is rather more bold than ordinary type and is therefore easier to read. The publisher and the authors are a l to be congratulated on the splendid book.

COMPLETE HANDBOOK ON STATE MEDICINE: By J. Weston Walch, chief compiler; Debaters Information Bureau, Portland, Maine; First copy \$2.50; extra copies to same school \$00.75.

This is a paper bound book of 158 pages designed for debaters information. Both sides of the subject are presented in a form readily comprehended by students. We believe that colleges and high schools may wish to have their students make use of this volume along with other material.

IMMUNOLOGY: By Noble Pierce Sherwood, Ph. D., M.D., Professor of Bacteriology, University of Kansas, and Pathologist to the Lawrence Memorial Hospital, Lawrence, Kansas; St. Louis; The C. V. Mosby Company; 1935; Price \$6.00.

This is a book of 608 pages and seems to give the physician just the facts he would wish to know if he is at al interested in understanding the processes of immunology. There are 26 chapters; a few of the titles that will give an idea of

the work are as follows: Infection and Infectious Agents, Anatomical and Physiological Factors in Infection, Resistance of the Individual, Inflammation and Tissue Immunity, Precipitins, Toxins-Antitoxins, Bacterial Antigens and Specificity, Colloids, Opsonification and Bacterial Complement Fixation, Complement Fixation in Syphilis, Hypersensitiveness, and Hypersensitiveness Due to Infection. The author has drawn extensively upon the literature and makes frequent references to it in every chapter. The subject matter of this book should be more familiar to all physicians than what it is and therefore the book is highly recommended as one that practitioners should own and study. The publisher's work is highly creditable.

DISEASES OF WOMEN: By Harry Sturgeon Crossen, M. D., F.A.C.S., Prof. Emeritus of Clinical Gynecology, Washington University School of Medicine; Gynecologist to the Barnes Hospital, St. Louis Maternity Hospital, and St. Luke's Hospital; Consulting Gynecologist to DePaul Hospital and the Jewish Hospital; Fellow of the American Gynecological Society and of the Central Association of Obstetricians and Gynecologists; and Robert James Crossen, M.D., Instructor in Clinical Gynecology and Obstetrics, Washington University School of Medicine; Assistant Gynecologist and Obstetrician to the Barnes Hospital and the St. Louis Maternity Hospital; Gynecologist to St. Luke's Hospital and to DePaul Hospital; Fellow of the Central Association of Obstetricians and Gynecologists.

This well known book by well known authors is being issued for its eighth edition. This, more than any previous edition, is stressing the knowledge of the endocrine system in relation to the genital tract. This wil add greatly to the value of the work and, if possible, increase its popularity.

A MARRIAGE MANUAL — A PRACTICAL GUIDE BOOK ON SEX AND MARRIAGE: By Hannah M. Stone, M.D., Medical Director of the Birth Control Clinical Research Bureau and of the Marriage Consultation Center at the Community Church and Labor Temple in New York; and Abraham Stone, M.D., Adjunct Neurologist at the Sydenham Hospital, Co-director of the Marriage Consultation Center at the Community Church and Labor Temple in New York; Simon and Schuster, N. Y.; 1935.

The book is a record of hypothetical consultations between a physician and a young couple about to be married. The various problems such as Fitness for Marriage, Problems of Reproduction, Art of Marriage, etc., are discussed with absolute frankness in a language that the lay person should comprehend. It seems to be a book that physicians may safely place in the hands of patients who need such instruction.

RUSSEL A. HIBBS: By George M. Goodwin; Columbia University Press, New York City; 1935: Price \$2.00.

This is a small book of 130 pages devoted to the life of a man who contributed in a large way to the development of orthopedic surgery.

Gibbs was born in 1869 near Birdsville, Southwestern Kentucky. He was graduated in medicine in 1890 from the University of Louisville. In 1893 he went to New York having practiced in Kentucky and Texas for three years. Through the influence of Dr. John Wyeth who was medical head of the Polyclinic Hospital, he received the appointment as interne. After a year, an opening presented itself at the New York Orthopedic Dispensary and Hospital for a house surgeon: the institution was founded through the influence of Mr. Theodore Roosevelt, father of the President of the same name. There passed through the doors of this make-shift institution a large number of maimed individuals so that Hibbs' sympathy for them was greatly stimulated; he remained there for four years.

Through a misunderstanding on the part of his Superior, his Superior handed in his resignation Hibbs was then, after some deliberation, placed in full charge with the title of surgeon-in-chief; he was first named surgeon-in-charge; this he refused.

Under Hibbs' management, the Orthopedic Hospital was greatly enlarged and heavily endowed. Hibbs possessed originality of mind and technical imagination so that he developed many new methods in orthopedic surgery.

In 1919 he was made professor of orthopedic surgery at Columbia University, after having been offered a professorship of orthopedic surgery in the Cornell Medical School.

He was married in 1904 to Miss Madeline Cutting of Mass. Mrs. Hibbs was always interested in her husband's orthopedic work, and especially in his welfare. She was always careful to see that he had plenty of evenings at the opera, concert, etc. He was a great lover of fishing and hunting. They had no children. In May, 1932, he suffered a coronary thrombosis which left him helpless. Death came to him on the 16th of September of that year.

Dr. Carl Vogel says of him "His inventive genius ranged the whole field of orthopedics, and his international reputation rests on many contributions covering a wide variety of subjects."

THE DOCTOR AND THE PUBLIC by James Peter Warbasse, M.D. Published July, 1935, by Paul B. Hoeber, Inc. Price \$5.00.

All cultured individuals, physicians and others, should read "The Doctor and The Public." It is one of the most readable accounts of medical history that has been the privilege of the reviewer to have read.

Throughout the book there runs a philosophical

strain of idealism which shows the broadmindedness, keenness of observation, and erudition of the author. The theme of the discourse is that individuals utilize but a limited portion of their capacity, and society in general but a fraction of its resources. There exists in the science of medicine an unutilized surplus of potential aid which should be put to use to accomplish tremendous good.

The book first tells of the art of protecting health in the humans and even among the animals. The primitive healer, the priest, and medicine men with their mysticisms, incantations and exorcism and their beginning of the use of drugs are touched upon. He traces the origins of medicine through the Asclepiads and shows how medicine was the mother of science, and that it was cradled in India, then in Egypt, China, Mesopotamia, Greece, the Roman Empire, etc., and on to the middle ages where a few thinkers fed the flame of learning, keeping it alive for the modern age.

The author shows that medicine touches every human relationship. He also shows that the way that medicine is practiced today is a business. He states that if physicians had their incomes guaranteed, they could and would do much better scientific work than is being done under the present system. He especially recommends group practice; by pooling resources physicians can have better equipment and do better work.

He discusses the schemes under which medical practice is done in various countries of the world with their advantages and disadvantages. He projects an idealistic cooperative health association which is a speculative scheme for improving medical practice in America.

The important thing that he says in this connection is that a change is inevitable and that the medical profession cannot afford to close its eyes;

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that some form of socialized medicine is coming and that if the medical profession doesn't plan its own course the people themselves will make the plan. He says the world is waiting for medical leadership. We must have new ideas and institute new methods and change with the events rather than let the events change themselves. The gist of his socialized scheme seems to be for the physicians to organize themselves into groups in order to give more effective medical service. The groups may then enter into contractual agreements with patients organized or unorganized.

Dr. Warbassee is more than a medical historian. He has crammed into this book of less than 600 pages a tremendous amount of fact—interesting—much of which is not strictly medical history. He shows himself to be not only a medical historian, a physician and scientist but a sociologist, an economist, a philosopher, and certainly a thinker with unlimited vision.

The work of the publisher is to be especially commended.

THE STOMACH AND DUODENUM: by George B. Eusterman, M.D., F.A.C.P., Head of Section in Division of Medicine, The Mayo Clinic, Professor of Medicine, The Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota; and Donald G. Balfour, M. C., M.D. (Tor.) LL.D., F.A.C.S., F.R.A.C.S., Head of Section in Division of Surgery, The Mayo Clinic Professor of Surgery, The Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota; and Members of the Staff, The Mayo Clinic and The Mayo Foundation for Medical Education and Research, Graduate School, University Minnesota; 858 pages with

436 illustrations; Philadelphia and London; W. B. Saunders Company; 1935; cloth, \$10.00 net.

There are 925 pages and 63 chapters in the book, and an extensive index of both subjects and authors. The first chapter is devoted to the history of these diseases, the second to physiology, and the third to ulcers.

Then comes surgical pathology, necropsy, dyspepsia, examination of patients, test meals, significance of symptoms, x-ray diagnosis, etc. Every possible disease, complication, and condition affecting the stomach and duodenum has been touched upon.

This is a splendid book especially for reference and should be in the hands of every practitioner of medicine. The publishers have done an artistic as well as a practical presentation of the subject.

DIET CONTROL—A system of eleven hundred diets for the prescription of diabetic, anti-obesity and measured diets in general, by George E. Anderson, M.D., Attending Physician to The Brooklyn Hospital and the Lutheran Hospital, and Chief of Metabolic Clinic, The Brooklyn Hospital; and Paul Chadbourne Eschweiler, M.D., Assistant Attending Physician to The Brooklyn Hospital and the Methodist Episcopal Hospital; Publishers, Gallo and Ackerman, Inc.; 142 Liberty Street, New York City.

The authors set for themselves the task of devising a low calory basic diet with optimal dietary needs of calcium, phosphorus, iron, protein and vitamins. A basic diet containing 1085 calories, 100 gms. of which are carbohydrate, 70 protein, and 45 fat is distributed in three meals. To this may be added the necessary amount to maintain or obtain proper weight.

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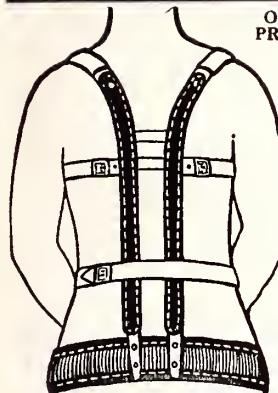
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A TEXTBOOK OF BACTERIOLOGY: By Thurman B. Rice, A.M., M.D., Professor of Bacteriology and Public Health at the Indiana University School of Medicine; 551 pages with 121 illustrations; Philadelphia and London; W. B. Saunders Company; 1935; Cloth, \$5.00.

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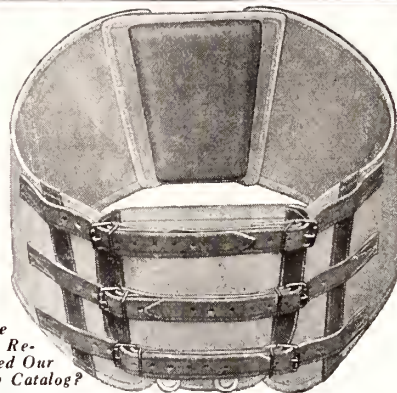
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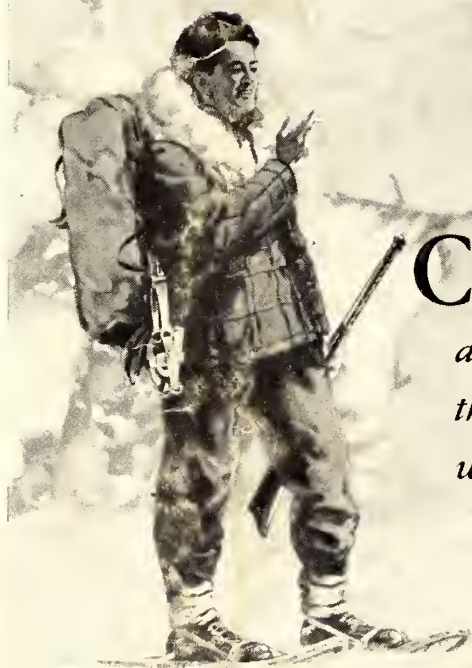
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No. 2

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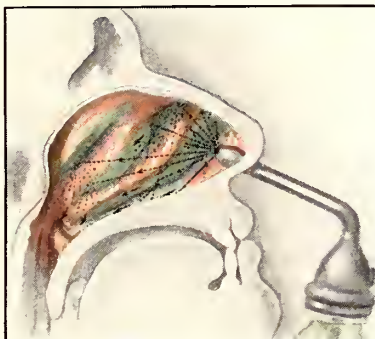


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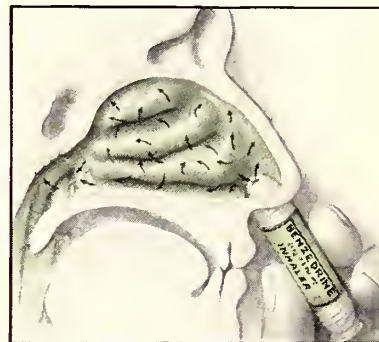


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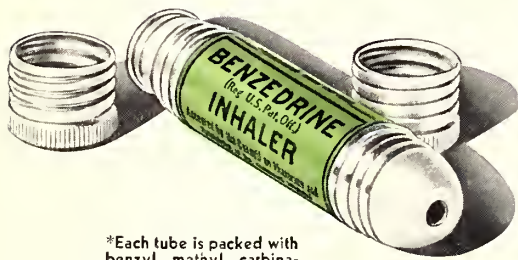
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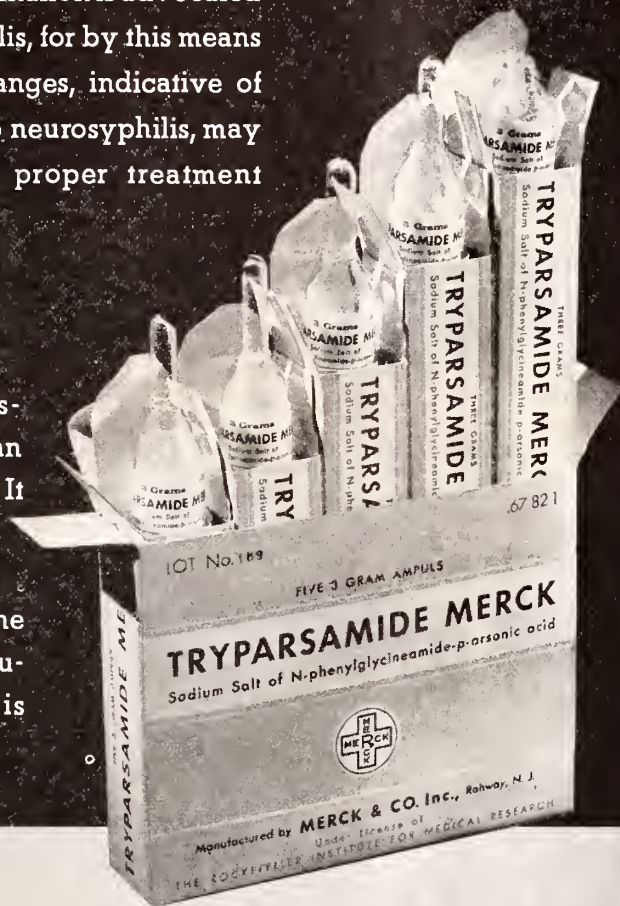
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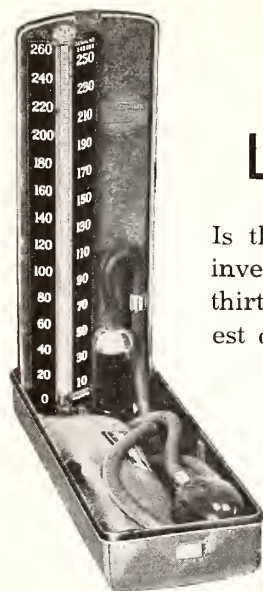
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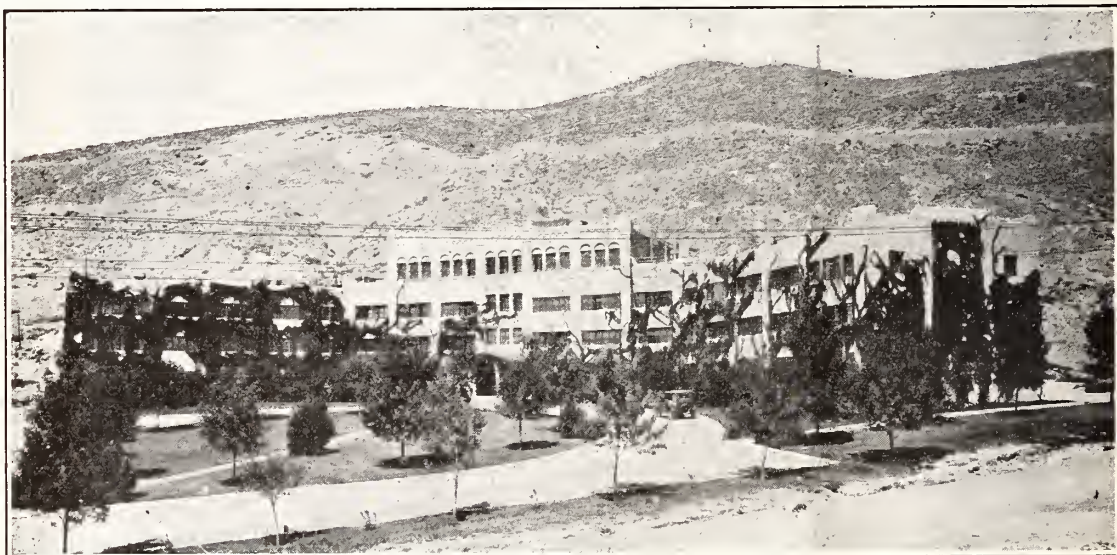


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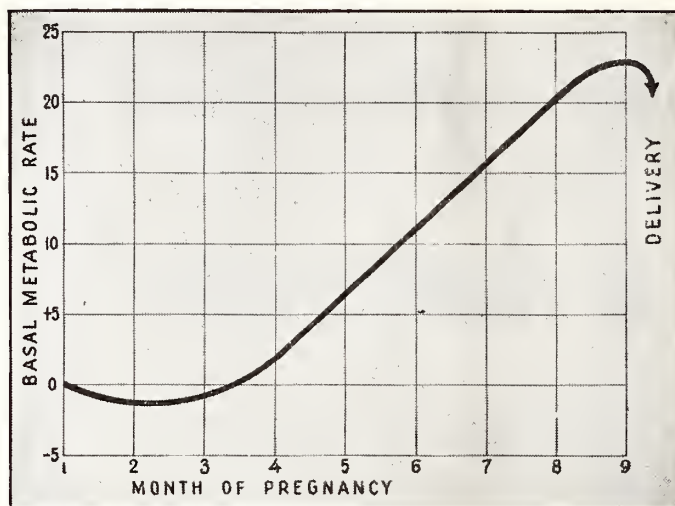


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CANNED FOODS AND THE PUBLIC HEALTH

I. The "Ptomaines"

• Many requests received for further information on canned foods have inquired as to some of the public health aspects of this class of foods. We appreciate the frank interest of our readers in this subject about which so much misinformation exists. We are glad, therefore, to devote this discussion, as well as subsequent ones, to the most popular of the lay misconceptions concerning the wholesomeness of commercially canned foods.

Some laymen hold the belief that canned foods, in some mysterious manner, develop "deadly ptomaines" within the can and hence the consumer of such foods stands in danger of "ptomaine poisoning". In the light of modern knowledge, this belief is ludicrous; it probably had its origin in the old "ptomaine theory" of food poisoning, now so thoroughly discredited by modern medical authorities (1).

Between the years 1870 and 1880, a large number of substances were obtained from protein material which had undergone bacterial putrefaction. These substances were aptly called "ptomaines", from the Greek "ptoma" or "dead body". Toxicologists of the day ascribed marked toxic properties to the new found ptomaines, chiefly by injection studies rather than by feeding tests.

The science of bacteriology was then in

its infancy—the true causes of food infection or intoxications were not known. Consequently, the discovery of ptomaines, with their alleged toxic properties, permitted the convenient diagnosis of "ptomaine poisoning" for all illnesses following the ingestion of foods. Today, we know that such illnesses usually result from the ingestion of food which had been infected by certain bacterial groups, and not from protein degeneration products such as ptomaines (2, 3).

One authority has stated that "ptomaine poisoning is a good term to forget" (4).

To this we might add that it would also be well to discard the old, unfounded belief that foods in the tin can develop substances hazardous to health.

Canned foods are merely selected foods which, after proper preparation, are sealed in hermetic tin containers and given a heat process calculated to destroy pathogenic and spoilage organisms which might be present on the raw foodstuff. The hermetic seal prevents future infection of the food by such organisms and insures its preservation and wholesomeness.

Such are the simple facts. The cooperation of the medical profession is earnestly solicited in combating the ludicrous, yet widespread, lay prejudice against commercially canned foods.

AMERICAN CAN COMPANY

230 Park Avenue, New York City

(1) *Journal American Medical Ass'n*, 90, 459 and 1573 (1928).

(2) *Food-Borne Infections and Intoxications*, F. W. Tanner, Twin City Pub. Co., Champaign, Ill., 1932.

(3) *Food Poisoning and Food-Borne Infections*, E. O. Jordan, University of Chicago Press, 2nd Ed., 1930.

(4) *Preventive Medicine and Hygiene*, M. J. Rosenau, Appleton-Century, New York, 6th Ed., 1927, p. 668.

This is the ninth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.

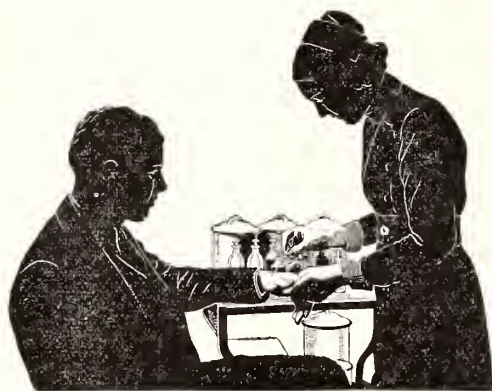


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VOL. XX.

FEBRUARY, 1936

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THE TREATMENT OF PNEUMONIA IN EARLY CHILDHOOD

E. P. COOK, M. D., F. A. A. P.

San Jose, California

Knowledge gained in recent years of the etiology and pathology of the pneumonias has not given striking decrease in mortality. With no specific remedy, the problem is a challenge to our therapeutic ingenuity and resourcefulness. Many agents of worth are used. I purpose to assemble and coordinate these procedures into a systematic plan of treatment. In the foreground is the careful management of the child as a whole, rather than treating exclusively the major pathological process.

The upper air passages and even the lungs are inhabited by a great variety of micro-organisms; broncho-pneumonia develops under a variety of conditions. Infectious diseases are the most important group of predisposing causes. Measles, whooping cough, and influenza are familiar examples. Simple infections of the respiratory tract, the so-called mixed respiratory infections, and bronchitis are also of the utmost importance. There may be great difficulty in determining whether or not a bronchitis has advanced to a point where it should be called bronchopneumonia. Fortunately, treatment does not depend thereupon; we must be guided by the degree of illness as evidenced by toxemia, fever, and general prostration.

The clinical course of a primary infection is fairly definite. The abrupt onset with fever, prostration, and rapid pulse denotes an acute infection. The appearance of cough and dyspnea will direct attention to the lungs, where the initial signs of faint or impure breath sounds over a localized area are followed in a day or two by bronchial breathing.

PROPHYLAXIS: Pneumonia is easiest to

treat by preventing. It is not controllable by the ordinary public health methods of isolation, quarantine and supervision and water supply. Undernourished and delicate children should be carefully protected from sudden lowering of the body resistance by chilling, and from contact with individuals suffering from respiratory infections or other infectious diseases, particularly measles, whooping cough, and influenza. Persons with acute or chronic upper respiratory infections should be kept away from the premature and congenitally weak infants. Mild, apparently insignificant upper respiratory infections should never be ignored.

I consider it of the utmost importance, though frequently accomplished with difficulty, to put children to bed when they have fever until entirely well. Too often mothers allow the pleas of the children to overrule their judgment and slight colds become serious by reason of exposure and fatigue. Furthermore, it is common for parents to allow children to get up as soon as the temperature becomes normal. The only safe rule is that an afebrile period of at least 48 hours should elapse after a respiratory infection before a child is allowed out of bed. Even then it should be a matter of one or two hours the first day, with a convalescent period of three days before he is allowed to go to school. A child has no judgment in conserving his strength and the minute he is up he goes at top speed until exhausted.

NURSING CARE: I know of no other disease in which it is more necessary to have a capable, quiet nurse or attendant who understands children and the value of sick room serenity and efficiency. With the hospital patient this is taken care of automatically; but the majority of cases are treated at home and by a mother usually willing and cooperative, always anxious, but often lacking in nursing experience. Children are quick to sense and

respond to the nurse who is quiet, confident, and hopeful. Indecision, lack of confidence, over anxiety, and tears, have no place in a sick room. We must not deceive ourselves by thinking that a child is too young to notice these things and be affected by them.

A graphic temperature chart is suggested in every case as a most valuable aid in following the course of a fever, and may furnish the first indication of a complication.

Warmed fresh air is vital to the patient's well being. The air should be warmed to a temperature of between 65 and 68 degrees as actually recorded by a thermometer placed near the child. Such a temperature permits light clothing. It is exhausting to a hot, restless child to struggle under many layers of clothing and bed covers, lifting the added weight with every inspiration.

In addition to warming, the air also may be moistened to advantage. Plain unmedicated steam is very effective, or any of the usual volatile oils may be added to the water. Inhalations may be given for 30 minutes at intervals of every two to three hours and preferably under a canopy. It is not advisable to use a closed tent because of the extreme heat which develops, with perspiration and possible chill afterwards.

Inhalations should be continued as long as there is distressing cough or scanty secretions. The milder cases may be sufficiently relieved by simply allowing a kettle to boil constantly in the sick room.

DIET: It is possible to give specific instructions regarding diet, but these vary with the individual child. Bearing in mind the possible protracted course of the disease, it is necessary to encourage as much nourishment as the digestive apparatus can tolerate. The foods should be bland and easily digestible. These may include, milk, broths, soft eggs, pureed vegetables, creamed vegetable soups, scraped beef, jelly, junket, custard, and fruit juices. Milk is sometimes vomited but this may be avoided by boiling and diluting it, or giving evaporated milk with lactic acid. In general, it is better to offer smaller amounts of food at four hour intervals than three large meals a day.

COUNTER-IRRITANTS: The use of counter-irritation is beneficial when pleural pain and cough are prominent. Mustard plasters

are perhaps most effective. Variations in the strength of mustard and the sensitiveness of the skin make it impossible to give definite instructions regarding proportions of the ingredients until a trial has been made.

HYDROTHERAPY: A maxim which I have always thought particularly apt is "plenty of water inside and out." A child will rarely voluntarily take sufficient to meet the demands of his toxemia. Further intake may be encouraged by offering orangeade, lemonade, canned fruit juices or bottled soda water, given as such or diluted with water.

A sponge bath at a temperature of 90 degrees given under the covers so that the child will not be exposed to the air often results in a refreshing sleep of several hours. An ice bag to the head and a tepid sponge bath can transform a delirious patient into one enjoying a quiet sleep. It is not the hyperpyrexia that needs control, but the accompanying nervous manifestations.

Just a word regarding sponging: Most mothers fear the procedure as one which may cause the child to take more cold. This should not result if the patient is not exposed and the bath begun at a temperature of 95 degrees, gradually being reduced to 90 degrees and even 84 degrees according to the degree of fever. To be most effective the cloth should be wrung fairly dry, the bath continued for 10 to 15 minutes, and the moisture allowed to evaporate on the skin.

ABDOMINAL DISTENTION: This unpleasant occurrence is fairly frequent. When it first appears all food should be withheld for 12 hours and a cathartic given.

Turpentine stupes and enemas will relieve the milder cases. If these are ineffective, 0.5 c.c. of obstetrical pituitrin should be given every three hours, or as needed.

A persistence of the condition after these measures have failed, and they unfortunately will fail sometimes, usually means the development of peritonitis or approaching death as a result of circulatory failure.

DRUG TREATMENT: The parents' importunate demands that something more be done in a critical case may lead us into the error of prescribing useless medication which may irritate and exhaust the child in the effort to administer it. Furthermore it is apt to turn him against taking nourishment by mouth

and make it difficult to give that most needed, if not actually producing a digestive upset. These parental demands may be met by emphasizing the importance of rest, less disturbance, and the hour by hour nursing care. I believe we are well repaid for time spent in education. There are definite indications for drug therapy, and a few simple drugs serve us well.

Children with pneumonia usually **cough** and this demands consideration. The warmed fresh air, inhalations, and counter-irritation are the first things. Hot drinks are soothing. One ounce of hot milk with a little bicarbonate of soda, given frequently, will often allay a spasm of coughing. In the early stage when secretions are scanty, syrup of hydriodic acid is effective.

Rest and sleep are necessary to conserve strength. Hypnotic drugs such as barbitol and chloral hydrate serve if no pain is present. If there is pain, codein is by all odds the drug of choice. It may be given by mouth or hypodermically. Morphine, while a more powerful, pain-relieving drug than codein, is not well tolerated. Young children seem to be much more susceptible to morphine in proportion to body weight than adults. This is probably due to their greater oxygen metabolism with resulting greater effect when this is interfered with by morphine. Further, codein, like morphine, will depress the respiratory center and raise its threshold for carbon dioxide. There results an increase of CO_2 in the lungs with consequent liberation of carbonic acid which inhibits the growth of pneumococci. Finally, and of great importance, is the fact that codein is not addiction producing.

Cardiac failure has always been most feared in pneumonia. Clinical study has shown that as an isolated event it occurs very seldom. It is commonly associated with terminal collapse with respiratory failure, abdominal distention, acute sepsis, and rapid death. For a mild degree of cardiac failure, as evidenced by a too rapid and irregular pulse, caffeine, and digitalis are the stimulants of choice. Reserve such stimulation for the time when, and if, indicated. Digitalis is, of course, the choice if auricular fibrillation occurs. Camphor in oil is a drug deserving of the high regard in which it is held, both as a stimulant and because of its bacteriostatic effect upon the pneumococ-

cus. Skepticism and faith, both in the extreme, surround the use of alcohol. We like it in the grave pre-critical period. Brandy, or whiskey, in doses of 20 to 30 drops in sweetened water may be given to a young child every three hours.

Atropine, as a respiratory stimulant and at those times when profuse bronchial secretions seriously embarrass respiration, may be almost life saving. Children tolerate it well. A single dose of 1/400 grain to a child of four years may completely dry up the secretions and overcome the dyspnea and restlessness.

Our list of most useful drugs then includes barbitol, codein, caffeine, digitalis, camphor in oil, and atropine.

BLOOD TRANSFUSION: I have long been interested in the effect of blood transfusion in cases of prolonged acute infections, and while it is not advisable to increase the blood volume by any large amount when pulmonary congestion exists, small transfusions, perhaps repeated, are not subject to this objection. Recently four infants under 16 months of age, who had been sick from four to eight days with profound toxemia and prostration of severe bronchopneumonia, were given amounts of blood varying from 85 to 125 c.c. Each one showed a prompt decline of temperature with such improvement in the general condition that they were convalescent within a week.

Serum therapy is an attempt to confer immediate immunity on the patient by administration of a serum which contains a large amount of the immune bodies which the patient is trying to develop. These immune substances are all anti-bacterial rather than antitoxic. No toxin-antitoxin mechanism has ever been demonstrated in lobar pneumonia.

Until recently specific therapy has not been practical due to the time necessary for typing the pneumococcus. If two or three days must elapse while waiting for a report from the laboratory the patient's condition is often such, one way or the other, as to render serum of little value. The rapid Neufeld reaction for typing as proposed by Sabin is simple, well within the powers of the small hospital with moderate laboratory facilities or even the clinician himself.

The first requirement is to obtain sputum directly from the lungs. A sterile swab passed

low in the throat will usually induce a cough and catch the sputum. Older and cooperative children will expectorate the raised sputum. Kernels of sputum are spread on cover slips with a two mm. platinum loop, and an equal quantity of undiluted rabbit serum (type I serum to one, type II to another, etc.) and a loopful of Loeffler's alkaline methylene blue added to each. The cover slips are then inverted over hollow-ground glass slides and examined after two minutes with an oil immersion lens and artificial blue light. In a positive reaction the capsule becomes swollen, is refractile and does not take the stain; the organism within it is stained blue.

The clinician may find himself confused regarding the types of pneumococci, their relative frequency in lobar pneumonia, and the importance of each type. This is particularly true when one attempts to correlate the statistical studies made in various places and at different times. Three distinct serological types have been demonstrated: Types I, II, and III, and a mixed group, IV, containing all other strains of pneumococci which fail to react with the respective type antisera. Group IV has been further divided into twenty odd types. Six different observers, three in the United States and three in England, have recorded the frequency with which the different serological types occurred in each of their series, as follows:¹

Type I varied from 25 per cent in one series to 45 per cent in another; type II from four to 32 per cent; type III from 28 to 52 per cent.

These figures indicate that the incidence of the various types vary widely from place to place and from time to time, but in contrast to adults, the majority of pneumonias in infancy and childhood are due to the new types identified from the old group IV.^{2,3} Mortality appears to be highest with type IV and lowest with type I, while group IV tends to have a lower mortality than any of the three main types.

Commercial antipneumococcus serum is readily available for types I and II and there seems to be little doubt as to its efficacy in type I even though there is little statistical evidence that the death rate has been decreased by its use. Serum is also available for types III, IV, V, VI, VII, VIII, IX, XIV, XV, XVIII, XIX and XXII.

Before administering serum it is of the utmost importance to determine whether or not the patient is sensitive to horse serum. A history of hay-fever, asthma, or urticaria, or any previous injections of horse serum, would mean a possible sensitiveness. In addition the patient should be tested with the serum to be used. The intradermal test consists in the intracutaneous injection of 0.02 c.c. of serum diluted one to 10 with normal saline. An irregular urticarial wheal surrounded by a zone of erythema denotes sensitiveness. The conjunctival test, one or two drops of undiluted serum directly into the conjunctival sac, shows sensitiveness, by reddened and injected conjunctivae within 15 minutes.

If the tests reveal only a slight sensitiveness, serum may be given in graduated doses at half-hour intervals, beginning with a very small amount. A syringe loaded with adrenalin should always be at hand in case of a reaction. (It is also wise to have a tourniquet. Ed.) If both the intradermal and conjunctival tests are positive, the patient is so highly sensitive as to render inadvisable the administration of serum.

After 20 years the results of serum therapy are not such as to recommend its widespread use in pediatric practice. This is due chiefly to the natural low mortality of lobar pneumonia in children, and the relative infrequency of type I infections.

OXYGEN THERAPY: I always regard this as the ace-in-the-hole when a child becomes critically ill with pneumonia because it affords such rapid relief from the exhausting dyspnea and restlessness. It really seems to be life saving, though difficult to prove.

The primary purpose of oxygen therapy is to combat anoxemia.⁴ Normally the oxygen content of arterial blood is approximately 90 per cent of its total capacity and in venous blood approximately 70 per cent. Under normal conditions the body is able to take up its required amount of oxygen from air with its one-fifth oxygen content. During pneumonia this ability is decreased, resulting in anoxemia—increased unsaturation.

There is a definite relationship between the degree of cyanosis and the per cent of arterial unsaturation. Cyanosis is the indication for oxygen therapy. For practical purposes detectable cyanosis of the finger nails and lips

represents approximately 10 per cent unsaturation, definite cyanosis 15 per cent, and marked cyanosis 20 per cent or more. It is most important to watch carefully for early cyanosis in order to institute oxygen therapy at the proper time, thereby preventing serious toxic changes which occur from anoxemia.

The dosage of oxygen to be most effective is fairly well established. A concentration below 30 per cent is rarely of value, while 30 to 35 per cent will generally lessen cyanosis, and the optimum is between 40 and 60 per cent. The most desirable pressure is two and one-half times that of the atmosphere, or 50 per cent.

Concentrations of 35 to 38 per cent may be obtained by a nasal catheter with a high-pressure oxygen tank and a calibrated reducing valve. With a double catheter 5.0 litres may be administered, the inspired air containing approximately 38 per cent oxygen. The terminal one inch of catheter should be perforated with several small holes. The funnel method of giving oxygen from a low pressure tank is practically useless.

To administer the optimum concentration it is necessary to use an oxygen tent. This equipment is well within the means of a small hospital or the private practitioner. The operation is so simple that a nurse can be instructed in its proper use in a few moments.

It should be remembered that the body stores no oxygen; so if oxygen is needed, the need is constant. The tent provides a method whereby oxygen enriched air may be continuously circulated at the optimum concentration, cooled to the desired temperature, and with the carbon dioxide content maintained at one per cent or less. Any increase over one per cent stimulates respiration which is usually not desired. A simple testing apparatus accompanies the tent, by means of which the tent air can frequently be tested for both its oxygen and carbon dioxide content. The latter should be kept at a concentration not exceeding one per cent in order to avoid overstimulation of the respiratory center.

On placing a restless, dyspneic, cyanotic child, with frequent pulse and respiration, into a tent, the beneficial effect is prompt and sometimes spectacular. The pulse and respiration become slower, the temperature often drops two degrees or more, breathing becomes

easier, and increased comfort is followed by much needed rest. Cyanosis is relieved as the arterial oxygen saturation increases, and it will frequently prolong a life until such time as the child can build up his immunity.

COMPLICATIONS

DEHYDRATION: Some of the sickest children I have seen have been those who developed marked dehydration. Mention has already been made of forcing fluids by mouth. If a satisfactory amount, which means from one to two quarts a day, cannot be given in this manner, we must resort to infusion. For this purpose we prefer Ringer's or Hartmann's solution, which can be given in amounts varying from 200 to 500 c.c. every eight, 12, or 24 hours, with complete absorption and without irritation. The giving of fluids by rectum is unsatisfactory with children. A few ounces may be retained at first, but repetition of the procedure results in such irritation of the rectum that further retention is impossible.

OTITIS MEDIA: Infection of the middle ear is always possible when there is an infection in the upper air passages; in pneumonia it is a most frequent complication. The only certain way to detect the condition early is by frequent examinations of the ear drums. Otitis media may and frequently does occur without pain; the ears are objects of suspicion when there is a sudden rise in temperature, increasing restlessness, rolling of the head from side to side, or the definite complaint of earache.

Pain alone is relieved by the application of dry or moist heat. Carbolyzed glycerine is a favorite remedy and causes local anesthesia of the drum membrane which is particularly useful if paracentesis becomes necessary.

To irrigate or not is a matter of personal preference. I favor it, providing the procedure can be carried out without too much antagonism from the child.

An ear drum which shows increasing redness and swelling, and is painful, should be incised early. If carefully performed it will not introduce outside infection and does allow the escape of gas and serum. Prompt healing and relief of symptoms usually follow.

If distinct bulging of the drum membrane has occurred, paracentesis will be followed by drainage of pus for from a few days to three weeks and occasionally longer. During this period douching should be carried out careful-

ly, and the external ear kept scrupulously clean to avoid the development of furunculosis.

PYELITIS: Urinary tract infections frequently follow a focus in the respiratory passages and while pyelitis is not a common sequel of pneumonia, examinations of the urine are the only means to detect its presence. A moderate albuminuria is to be expected but persisting pyuria demands the recognition and treatment of pyelitis.

EMPHYEMA: The treatment of this complication which we have found most effective is similar to that so ably described recently by Mason.⁵ When the pleural effusion assumes the character of frank pus, as determined by repeated aspirations, open drainage by rib resection has been followed by the lowest mortality and most rapid obliteration of the abscess cavity.

MENINGITIS and MENINGISMUS: Symptoms of meningeal irritation demand early spinal puncture for two reasons: It is the only way by which we can differentiate meningitis from meningismus, and it is good treatment in either case. Repeated spinal drainage offers the best hope of relief in meningitis, and will alleviate the marked nervous symptoms of meningismus.

CONVALESCENCE

Children with pneumonia should be kept in bed at least one week with a normal temperature. This time should be extended for the severe cases and those with persisting cough, but in any case the child should feel perfectly well before he is allowed to get up. Recurrences are thus avoided and ultimate complete recovery hastened. Exercise at first should be limited and the initial period out of bed should be no longer than 15 to 30 minutes. This is gradually increased each day as returning strength permits. In allowing him to be out of doors, it must be remembered that he has become accustomed to the atmosphere of the house and fresh air periods must be carefully guarded and of short duration.

The diet need not be limited and the appetite is usually such that it is not necessary to force food. Cod liver oil is one of the best reconstructive tonics; syrup of ferrous iodid or iron and ammonium citrate should be added if the infection has been prolonged to the point of producing a secondary anemia.²

SUMMARY

The treatment of pneumonia necessitates meticulous care—care which safe-guards by early treatment of simple respiratory infections, which recognizes all possible complications and which is painstaking and tireless in surrounding the patient with all possible hygienic protection. The fundamental principles are proper rest, fresh air, food, hydrotherapy, oxygen, and symptomatic medication.

I know of no other disease in which the following words of a wise clinician are more appropriate: "Never despair of a sick child."

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PEPTIC ULCER: BENIGN OR MALIGNANT?

CHARLES T. STONE, M. D., F. A. C. P.
Galveston, Texas

(Presented before Southwestern Medical Association November, 1935.)

Peptic ulcer is the most frequent organic disease of the digestive tract; much is yet to be learned about it. Recurrent digestive symptoms, especially in the abdomen, with essentially normal health between attacks should arouse a suspicion of ulcer.

In common with essential hypertension, exophthalmic goiter, and irritable colon where dysfunction of the autonomic nervous system apparently plays a dominant part, peptic ulcer—especially duodenal—appears to be increasing in frequency. Making allowance for the deceptiveness of inferential evidence it seems that the present day struggle for existence will gradually occasion a higher ulcer incidence than now obtains. This is but one of the problems of ulcer that needs extensive investigation.

Most estimates give a ratio of duodenal ulcer to gastric of three or four to one but in his recent book Eusterman¹ states there are 12 pep-

tic ulcers of the duodenum to one of the stomach. Benign gastric ulcer occurs once to every three gastric cancers. At least two-thirds of the chronic peptic ulcers occur in areas not acid and pepsinogen secreting but are usually in parts of the digestive tract constantly bathed by acid gastric juice. It is generally held, therefore, that complete control over gastric acidity will do much in the treatment of ulcer. Gastric ulcers, strangely, are of equal frequency in men and women whereas duodenal ulcers are several times more common in men than in women; the reasons are unknown.

Chronic peptic ulcers exist more often than generally recognized without remarkable symptoms, or even with none. This emphasizes the necessity of considering ulcer in differential diagnosis in certain illnesses where the cause is obscure.

As a rule, the subjective complaints of peptic ulcer force the patient to seek medical aid. Given careful histories of chronic digestive disorders it should be possible to correctly diagnose ulcer in 75 per cent. There are three outstanding and "essential" symptoms of peptic ulcer: Pain, vomiting, and hemorrhage.

Pain in most ulcer patients tends to have remissions and relapses over months or years. It may occur practically at the same time each day or night. Generally speaking, the nearer the ulcer is to the stomach the sooner after the ingestion of food will pain appear and conversely the farther the ulcer is from the cardia the later it appears. Thus one, two or even three to five hours after meals, day after day, it comes regularly. The pain is slight to moderate to so severe that opiates are required. It is most often epigastric and more often than not in the middle between the umbilicus and the ensiform cartilage. Whenever the pain is referred from the ulcer to other areas such as, the back, the hypochondria, the liver area, or the lower front chest, the implication is that the ulcer is of the penetrating type—emphasized by Rivers². This is especially true with a slow perforation and adhesion of the base to an adjacent viscus. Overlooking this may cause much unnecessary confusion in the effort to evaluate the pain. The characteristic relief that follows taking food and alkalis is almost axiomatic. However, such relief usually is less prompt and less complete in gastric ulcers than in those distal to the pylorus. Nev-

ertheless, the pain, food (or alkali) ease sequence of ulcer is the best clue to correct diagnosis. Pain is not always described as such but perhaps as burning, fullness, weight, gas, etc. Oftentimes a careful investigation of such symptoms establishes them definitely as painful phenomena.

Vomiting, usually preceded by nausea, is the second most frequent symptom of peptic ulcer—occurring in 30 to 40 per cent of all cases. This may result either from pyloric spasm or cicatricial contraction incident to the healing of chronic ulcers. In either event vomiting is more likely when the lesion is close to the pyloric ring. In functional obstruction vomiting tends to reappear at similar periods on successive days, usually three or more hours after eating, when the gastric acidity is highest and the motility of the stomach greatest. Relief of pain, often partial, at times complete, follows emesis of a large quantity of highly acid gastric contents. This symptom at first may be present only at varying and irregular intervals, but if the ulcer is untreated the intervals tend to shorten so that in time vomiting occurs from one to several times per day. Under such circumstances the general health suffers with much loss of weight. Organic pyloric obstruction develops slowly, as a rule, allowing for compensatory hypertrophy of the gastric musculature which may be so efficient as to prevent vomiting until the pyloric closure is virtually complete; then the patient may eject almost everything taken into his stomach, and such cases frequently come under observation greatly dehydrated, markedly emaciated, in a state of akhalosis from loss of acids, with low blood chlorides, high blood urea, and with symptomatic polycythemia from blood concentration. Frequently it is well nigh impossible in a case seen for the first time to be certain whether the pyloric obstruction is functional or structural. The functional type is the far more common and in the majority of instances can be overcome by appropriate medical therapy.

In the order of frequency of the peptic ulcer triad of symptoms, the last is hemorrhage. While most ulcers ooze small amounts of blood at intervals, only about 25 per cent produce massive hematemesis or copious tarry stools. Approximately nine of 10 such hemorrhages result from peptic ulcer, (gastric or duodenal)

vigorously emphasizing the significance of this symptom. If loss of blood is considerable a state of acute post-hemorrhagic shock is produced. It is extremely rare that the first hemorrhage from an ulcer is fatal—occurring but once among my patients; opportunity for transfusions usually is afforded.

Perforation is a complication of an ulcer rather than a symptom; but at times patients are not sick enough to consult physicians prior to this serious and dramatic episode. Acute onset, agonizing pain, board-like rigidity of the abdomen (particularly of its upper half), absence of peristalsis, rapid pulse and perhaps a state of shock, speak loudly for perforation in the known ulcer patient, and suggest ulcer and perforation in the unknown group, most of whom had had digestive symptoms.

In addition to the three "essential" symptoms—pain, vomiting, and hemorrhage—gastric ulcer patients often present one or more "accessory" symptoms such as gas, belching, bloating, acid eructations, constipation, and pyrosis. In about one-fourth of all cases "indigestion" not typical of ulcer is the best that can be elicited; therefore, it is of paramount importance that every patient with symptoms of "chronic indigestion" should be given routine study including roentgenographic investigation.

The objective symptoms of uncomplicated ulcer are scant. Epigastric tenderness, with increase in muscle spasm, is usual. The nutritional status may be satisfactory unless considerable pyloric obstruction is present when bodily wasting and visible peristalsis from left to right across the upper half of the abdomen may be apparent.

In uncomplicated benign ulcer a modified Sippy treatment of rest frequent feedings of a bland diet and alkali to control acidity is the accepted therapy. Belladonna, sedatives (barbiturates, bromides, etc.), transduodenal feedings, gastric lavage, animal or vegetable mucin, and psychotherapy are additional weapons. For surgical treatment, the indications usually are perforation, repeated hemorrhages, pyloric obstruction not amenable to medical measures, marked perigastric or periduodenal adhesions; suspicion of a malignant change and failure to obtain satisfactory results from careful medical treatment. A well regulated life, ulcer diet, generally alkalies, and periodic va-

cations must be prescribed in most cases to be followed throughout life since otherwise recurrences are the rule. Once an ulcer, always an ulcer is probably not far from the truth. We fortunately are able to care reasonably well for the local lesion, but unfortunately cannot completely alter an individual's constitutional make-up, nor revamp his vegetative nervous system.

All that has been said is intended to apply largely to benign ulcers. Malignant metaplasia of duodenal ulcer is so infrequent that it is a medical oddity.

Proximal to the pylorus, however, carcinomatous change in an ulcer is common. To distinguish a malignant gastric ulcer from its non-malignant prototype all too frequently is impossible. In 1909 Wilson and MacCarthy³ reported 71 per cent of resected carcinomata of the stomach associated with definite ulcers, and in 1910 MacCarthy⁴ stated that 68 per cent of resected ulcers (including ulcers of the duodenum) were associated with carcinoma. Most clinicians believe that benign gastric ulcers undergo malignant transformation, but the view is widely held that this change occurs only in five to 10 per cent of the cases; in 1920 MacCarthy⁵ stated that it is impossible to give the per cent. More recently Pollard and Bloomfield⁶ and Hurst⁷ have claimed that the stomach with chronic gastritis and anacidity is the one most likely to develop carcinoma. Conversely, it is usually accepted that hyperacidity, an unstable nervous system, and other poorly defined conditions, favor ulcer development.

There are no absolutely positive criteria to enable one to say definitely whether a certain lesion is simple or malignant. He has certain generalities on which to project a therapeutic course. In the first place, the size of the ulcer is relevant, since an ulcer more than two cm. in diameter is more often cancerous than benign; but not all malignant ulcers have so large a diameter. Then too some large gastric ulcers are benign. Anacidity or hypoacidity favors the malignant nature of a process, and normal or high gastric acid speak for benign ulcer. In ulcer cases whose gastric acids have been repeatedly titrated over long periods a falling acidity suggests carcinomatous change. intermittently positive benzidine reactions in the stools suggest simple ulcer, whereas car-

cinomata tend to ooze blood continuously. Roughly speaking, a long history with intermittent symptoms over a period of years usually indicates a benign ulcer, while a short history with rapid progress of symptoms points to cancer, and yet such evidence may be misleading. The age of the patient is of importance; those under 40 most often harbor benign ulcers, while those above that age show carcinoma with much greater frequency. Finally, the response to careful medical management is helpful. Here the physician should proceed cautiously. The fallacy of prolonging medical treatment beyond two to three weeks in the face of unfavorable progress is perfectly obvious. If the symptoms abate rapidly and the ulcer crater diminishes in size or disappears completely, the lesion is most likely benign. On the other hand, persistence or intensification of symptoms under proper treatment definitely indicates cancer; and yet not all benign ulcers yield to medical treatment.

Perhaps the most valuable single part of the differential diagnosis between benign and malignant ulcer is given by the roentgenologist who often is the court of last appeal—at least preoperatively. However, neither the roentgenologist, internist, nor surgeon can definitely say that a given ulcer is one or the other. Even the pathologist often requires histological preparations before he is able to hand down a verdict which is always correct.

In conclusion: When gastric ulcer causes symptoms it is best to get all available facts relative thereto, carefully sift the evidence and utilize common sense in arriving at a conclusion. In most clinics a considerably larger number of gastric than of duodenal ulcers are treated surgically for the single reason that the clinical differentiation between benign and cancerous ulcers of the stomach is so difficult. The malignant ulcer is the undisputed property of the surgeon; but the internist should receive the patient while there is reasonable expectation that his efforts may prove beneficial.

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GASTRO - INTESTINAL SYMPTOMS IN PERNICIOUS ANEMIA

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It is well known that in pernicious anemia symptoms referable to the alimentary tract are often the first signposts of trouble; in the fully developed disease disturbances of the stomach or bowels may be most urgent indications for therapy; and finally during impending dissolution gastro-intestinal symptoms may overshadow evidence of the blood dyscrasia and lead an unwary diagnostician into error. Hence it does not seem amiss to call attention to the necessity of maintaining a constant lookout for the Addison-Biermer type of anemia in those cases of alimentary disorder whose origin is obscure or whose course is not typically influenced by the employment of standard remedies.

Beside sore tongue and the almost constant achlorhydria there may be stomatitis, anorexia, nausea, vomiting, abdominal distress, flatulency, heartburn and eructations of gas or clear fluid. Diarrhea is present in about 50 per cent of cases, sometimes accompanied by pain and tenesmus. Constipation is complained of in some cases and may alternate with diarrhea. Gastro-intestinal crises or paroxysms of severe pain in the abdomen may occur occasionally simulating acute surgical conditions of the abdomen. It should be remembered that gall-bladder disease is not an infrequent accompaniment of pernicious anemia. Bleeding from piles or from the rectal mucosa may supervene and the blood loss is at times sufficient to alter certain characteristic features of the blood findings. In approximately 30 per cent of cases the chief complaint at onset is of one or more of these symptoms.

In order to illustrate the timeliness of a consideration of the subject I report briefly sev-

eral cases of pernicious anemia in which, on account of outstanding gastro-intestinal symptoms, incorrect diagnoses were made resulting in each instance in undue prolongation of the patient's suffering and disability.

CASE No. 1: Mrs. A. L. was sent in from the country with a diagnosis of "colitis." A similar attack characterized by intractable diarrhea had occurred a year previously and had persisted for several weeks despite vigorous treatment. Since then the patient's health gradually declined with flurries of diarrhea. The present acute symptoms began 10 days ago and although the usual remedies for diarrhea had been given, the patient continued to have eight to 10 stools a day with severe abdominal distress, was constantly nauseated, and for the past three days had vomited all food ingested. She was well nourished but appeared critically ill, showing a marked pallor with a muddy yellow discoloration of skin and sclerae. The tongue was glazed and there was a history of sore mouth which had recurred at irregular intervals. Proctoscopic and stool examinations were negative. In two days the nausea, vomiting, pain and diarrhea were relieved and the case was well advanced into an induced remission.

CASE NO. 2: A Mexican youth, 18, was seen at Jefferson Davis Hospital on the service of Dr. B. F. Smith, to whom the credit for making the correct diagnosis is due. This patient already had been in the hospital over a month under treatment for "peptic ulcer." Blood studies were not conclusive; epigastric pain was the outstanding symptom. Under a modified Sippy regime he had shown no improvement. His appearance as well as the erythrocyte count denoted a moderately severe anemia. Dr. Smith first saw him at this time and as there was no history of hemorrhage to account for the anemia, questioned the diagnosis of peptic ulcer. Further blood studies tended to strengthen a provisional diagnosis of pernicious anemia and response to liver therapy fully confirmed it. Four gastro-intestinal series were made in this case with the following respective diagnoses: Duodenal ulcer; negative; duodenitis and subacute appendicitis; appearance suggests acute pancreatitis.

CASE NO. 3: White female, 54, had been in failing health for two years and had been seri-

ously ill for the past three months with anorexia, nausea, vomiting and diarrhea. She had lost 50 pounds in weight, become weak, fainted several times and was now confined to bed. She complained of paresthesias of the hands and feet and gave a history of sore tongue. Despite loss of weight she was still well nourished. She was very pale and the skin showed a lemon yellow tinge. Prostration was extreme. The tongue had a glazed appearance. A diagnosis of gastric carcinoma had been made elsewhere and death within a week forecast. History and physical examination suggested pernicious anemia and a hemanalysis by Dr. Martha Wood substantiated the diagnosis. On account of the urgency of the symptoms blood transfusion was advised but a suitable donor was not immediately available, so liver extract was given intra-muscularly and intravenously. The response was spectacular. Distinct improvement could be noted on the second day and continued steadily thereafter. Within a week the patient was asking permission to get up and in three weeks was able to walk about the room without feeling faintness or palpitation. Recovery was uneventful although paresthesia of hands and feet failed to yield to intensive liver-therapy.

CASE NO. 4: Male, white, 51, was admitted to Jefferson Davis Hospital June 19th, 1934, for "diagnosis." He had been treated in the outpatient clinic at Jefferson Davis Hospital for 18 months. When he first reported to the clinic he stated that he had been told he had ulcers of the stomach. Chief complaint was burning in stomach. X-ray of the stomach at that time did not show an ulcer but he was given the Sippy treatment. Two months later he complained of diarrhea; burning in the epigastrium continued and he was given the Sippy therapy. A month later he reappeared complaining of sore mouth and diarrhea. There was no skin eruption but pellagra was suspected and anti-pellagra treatment was instituted. Four months later there was burning in the epigastrium, alternating constipation and diarrhea, weakness, and loss of weight. The tentative diagnosis was carcinoma. About seven months after this carcinoma was still suspected and an exploratory laparotomy suggested which the patient declined to consider. Two months later he returned complaining of indi-

gestion and sore mouth. A month after this there was pain in the abdomen, sore mouth, and nausea and further loss of weight. For the first time the notes record anemia. About two weeks after this he was admitted to my service in the hospital. When seen on the ward he presented the typical picture of pernicious anemia. The erythrocyte count was 950,000. He responded well to liver therapy and was discharged after six weeks to the out-patient clinic, feeling greatly improved and with a red cell count of 2,500,000.

COMMENT: Of these four cases of pernicious anemia, the first had been treated at intervals for a year with a diagnosis of colitis, type unspecified; the second had been treated within the hospital for over a month as a case of peptic ulcer, with various X-ray diagnoses; the third had been regarded as a victim of gastric carcinoma until almost *in extremis*; and the fourth had been treated for 18 months, for stomach ulcer, pellagra, and carcinoma.

CONCLUSIONS: Gastro-intestinal symptoms occur in a large percentage of cases of pernicious anemia and sometimes dominate the clinical picture.

Such symptoms are ordinarily resistant to symptomatic treatment; but spontaneous remissions may occur.

The specific treatment for pernicious anemia affords the best hope for prompt relief of the gastro-intestinal symptoms.

In obscure alimentary disorders blood studies should routinely be made to exclude pernicious anemia and the other blood dyscrasias.

QUININE, INTRAVENOUSLY, IN THE TREATMENT OF PNEUMONIA

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The treatment of pneumonia with intravenous injections of quinine, is predicated upon: The high specific toxicity of quinine for pneumococci; the excellent results in the treatment of pneumonia and other respiratory tract in-

fections with quinine, orally, rectally, or intramuscularly administered, reported by Austin Flint, Jacobi, Da Costa, Solomon Solis-Cohen, Galbraith, Kolmer. Meyer Solis-Cohen, myself and others in America and by numerous physicians in Europe; a small per cent of pneumococci submitted to the effects of quinine are more resistant to it than are most of the individuals of the culture and ready to start luxuriant growth as soon as removed from the influence of the quinine; in treatment of pneumonia, if the quinine is discontinued within 24 hours after the temperature is normal a considerable per cent of the cases relapse whereas in those in whom the drug is continued for several days after the temperature is normal, relapses are infrequent if at all; injecting quinine into the veins seems to assure its contacting the greatest number of pneumococci in the highest possible concentration; in a small group of pneumonia patients quinine by mouth is relatively ineffective, even though large doses are administered, and in a relatively few of the cases in whom quinine has been found ineffective by mouth, it has produced excellent results by vein.

I have used quinine in the treatment of pneumonia for nearly 30 years, with an almost negligible mortality rate. I have had deaths from pneumonia in the much weakened, in the very aged, in infants, and in alcoholics, and I recall one death in a morphine addict; it was not possible to know whether pneumococci were the organisms causing these pneumonias or not. I can recall no death of a typical pneumococcal pneumonia in any other group, except during the influenza epidemic of 1918-1919 when the idea prevailed that an unknown organism was the cause of influenza and that pneumococci and other common bacteria were mild secondary invaders; therefore, I used quinine in treating influenza pneumonia, if at all, with little enthusiasm—except in one case. A robust young woman physician had extensive double pneumonia with fever around 105° for days and profound delirium. To Dr. A. H. Williams, associated with me in treating her, and to me, she seemed desperately hopelessly ill. She was then given 105 grains of quinine, intramuscularly in 15 grain doses at four to six hour intervals. This large

amount of quinine given in the relatively short space of time caused seemingly a miraculous cure, but both deafness and blindness. The deafness and blindness soon disappeared. It perhaps means nothing to say that I saw no other patient so desperately ill with the 1918-1919 influenza-pneumonia who recovered. I am fully aware that pneumonia patients make miraculous cures without quinine.

I acknowledge weakness in not having a long array of statistics with proper controls to prove the efficacy of the quinine treatment; however, I plead that my test tube culture experiments are so striking and should be so convincing as to excuse my not causing my pneumonia patients to take the greater chance of death through not having the quinine treatment.

The experiments which prove that quinine is specifically toxic for pneumococci were done as follows: Broth and agar agar media containing blood serum and hemoglobin, on which pneumococci grew luxuriantly, were used (the media were made under the guidance of Dr. Downey L. Harris, then pathologist and bacteriologist for the St. Louis City Hospital); one group of tubes contained the broth with 0.1 per cent quinine; a broth culture of pneumococci was shaken and from this one or two plain broth tubes and one or two quinine broth tubes were inoculated; they were shaken and from each a melted agar tube was inoculated and promptly poured into a petri dish. At one, two, three, and perhaps four hours plates again were made. All plates were incubated for 24 hours and then examined for the number of colonies. Sixty-seven different families of pneumococci were experimented with; 21 cultures were supplied me by Dr. E. C. Rosenow then of Chicago; the other 46 were isolated from cases with various types of pneumococcic disease. Many hundred experiments were run—many on each family of pneumococci. The results were extremely striking and consistent. Numerous other types of bacteria were used as controls; none of them ever had their growth deterred the least by quinine.

Seventeen average protocols are presented:

Inst. Plates	One Hour Plates	3 Hour Plates
	April 28, 1911	Sparks
400	2,000	5,000
300	200	0
	May 4, 1911	Hei.
2,000	100,000	100,000
2,000	500	2
2,000	100,000	100,000
2,000	500	4
	May 4, 1911	Seel
10,000	30,000	100,000
10,000	2,000	18
10,000	30,000	100,000
10,000	2,000	60
	May 15, 1911	Connors
10,000	10,000	50,000
10,000	0	0
10,000	10,000	50,000
10,000	1	0
	May 19, 1911	Hamm.
5,000	10,000	50,000
5,000	2,000	500
5,000	10,000	50,000
5,000	2,000	500
	May 19, 1911	Easly
5,000	10,000	50,000
5,000	2,000	500
5,000	10,000	50,000
5,000	2,000	500
	May 26, 1911	Mark
10,000	30,000	50,000
10,000	2,000	200
10,000	30,000	50,000
10,000	2,000	200
	June 1, 1911, Conner.	Media—5
2,000	5,000	10,000
2,000	50	0
2,000	5,000	10,000
3,000	200	0
	June 9, 1911, Connors.	Media—1.1
2,000	5,000	10,000
2,000	1,000	0
2,000	5,000	10,000
3,000	10	0
	June 2, 1911 No. 311, Rosenow,	Media .5
200	600	3,000
200	200	200
	June 2, 1911 No. 79, Rosenow	
200	4,000	10,000
200	200	10
	June 27, 1911 No. 549 Rosenow	
500	8,000	10,000
500	2,500	2,500
	July 1, 1911 No. 566	
3,000	5,000	0
3,000	5,000	0
	July 1, 1911 No. 79	
2,000	3,000	1,000
2,000	5,000	0
	July 1, 1911 No. 594	
5,000	15,000	0
5,000	2,000	0
	July 29, 1911 No. 509	
10,000	8,000	30,000
10,000	5,000	3,000
	July 20, 1911 No. 546	
5,000	10,000	50,000
5,000	2,500	1,000

In the protocols observe that: The figures in the first column under the words "Inst. Plates" (the plates made at the instant the tubes were inoculated) are about the same in each protocol showing that the two groups of tubes were

inoculated equally. In columns two and three, there are striking variations showing marked diminution of pneumococci in all tubes containing quinine especially when contrasted with the growth in those without quinine; in protocols four and five, is shown that the toxicity of quinine is greater for certain families of pneumococci than for others—extremely toxic in four and much less in five; even in the three hour plates of experiments four, five, six, seven, 10, 12, 16 and 17 there are many viable pneumococci ready to start rapid growth and reproduction as soon as removed from the inhibiting influence of the quinine, proving that individual pneumococci may be relatively resistant to quinine; and yet even in the tubes from which these organisms had been taken there was great destruction of pneumococci and certainly marked inhibition of growth of those not killed; experiments four, eight, and nine were with one family of pneumococci; in nine the organisms were seven days older than those in eight and 24 days older than those in four, and those in eight were 16 days older than those in four, showing that the pneumococci fresh from a patient are easier to kill with quinine than after they have been long in test tubes; for a time the organisms of the Rosenow cultures, at least is the one hour plates, show striking resistance to quinine and these cultures had been grown for many months only on culture media; in experiment 10 the fourth one hour plate had 10 organisms whereas the second plate had 1,000 presumably because the content of one wire loop was lost between the broth and the melted agar.

One must be impressed with the striking consistency of the results and of the marked toxicity of quinine for pneumococci; with nearly every culture, however, there are individual pneumococci with relatively high resistance to quinine.

Reasoning from test tube to patient, certain patients with pneumococcic infections—lobar pneumonia, bronchial pneumonia, bronchitis, bronchiectasis, tuberculosis with pneumococcic complications, colds—would be expected to have marked hinderance and lessening of the pathologic processes if relatively large doses of quinine be given them by mouth or by any other avenue. Other patients would be expected to respond slowly and stubbornly and sometimes not at all unless exceptionally high con-

centrations of the quinine were made to reach the organisms and retained there a sufficient length of time. Clinical results conform with striking exactness to the expected from a study of the test tube and plate protocols.

As colds are precursors of pneumonia, it is thoroughly logical to treat colds by administering liberal quantities of quinine and thus assume that many attacks of early or potential pneumonia are aborted. My clinical results confirm this theory.

Quinine in capsules or tablets is not always absorbed from the alimentary canal when administered by mouth. Patients find capsules and tablets entirely undissolved in their stools. I have had nearly no experience with administering quinine by rectum although one American author recommends that 50 grains be given at the earliest possible moment to a pneumonia patient by rectum; he claims excellent results.

Intramuscular injections of dihydrochloride of quinine have been highly satisfactory in treating pneumonia in my hands though painful and the quinine is said to sometimes cause necrosis at the site of injection; therefore I have adopted the intravenous route of administering the quinine in those cases who do not respond to it when given by mouth. The clinical results are just as striking as are the test tube experiments. Since clinical data can not be absolutely convincing without the controls expensive in lives as I am convinced they would be, I attach but two brief case histories and have no controls.

A young clergyman had a chill followed by fever and that afternoon he preached at a funeral service; though he nearly collapsed he concluded his task and on reaching home went to bed under the kindly ministrations of one of his well meaning lay parishioners who believed that the only treatment for pneumonia was good nursing. Pneumonia could not be found with a stethoscope until four days later; with the temperature around 104 and a mild delirium at times, she became alarmed and I was called after about 48 hours of his illness had passed. The conviction was that he must have pneumonia though proof of it could not be found; capsules containing five grains of quinine and one-quarter grain codein each were prescribed one an hour for four doses, and then one every four hours for another 48

hours or more with no apparent effect. The pneumonic process had continued, for at this time the findings in the lungs were clear-cut and positive for pneumonia; then he was given 10 grains of quinine by vein, 12 hours later a second and again 12 hours later a third injection. An x-ray at that time proved that he had a right upper lobe consolidation; his leucocytes numbered 17,850, 94 per cent of them being polymorphonuclears; the sputum contained both streptococci and pneumococci; a consultant's notation was, "A very sick man." Following the third injection of quinine the temperature fell from 104 to 101, but rose that evening to 102.6; then it was that his fourth injection was given; the next morning his temperature was 98.6, pulse 84, and respiration 20; the pulse was down to 64 by noon and 72 throughout the afternoon; from this on he had no more fever; he continued violently delirious however, and as it was feared that the quinine might be partially responsible for the delirium, no more quinine was given—although ordinarily I would have felt it necessary to give him quinine by mouth for several days; a spinal puncture was done on the second feverless day; promptly after this there was marked improvement of his mental state and a rapid return to normal status; the stethoscopic findings of abnormal lung condition rapidly diminished and the lung soon seemed entirely normal. He had nearly no cough and no sputum.

Another patient with a severe cold failed to respond to the quinine by mouth and as it was found that the capsules were being passed by rectum undissolved, three intravenous injections of 10 grains of quinine each were given him with no further fever or evidence of cold except that he required a few days to recover his strength and desire for work.

Conclusions: Quinine (combined with codeine) seems to be worthy of trial in every cold whether pneumonia has developed or not; if there is no improvement after the administration of large doses by mouth, the intravenous administration may be used—likely with good results. Especially should the quinine be used in the event of pneumonia and persisted in if good results are not obtained unless the pneumonia is not due to pneumococci.

The experiments which I did in the test tube and plates should be repeated by research

workers who have the facilities; in addition animal experiments should be done in which animals are injected with pneumococci and then given quinine; it would also be interesting to know how each of the various types of pneumococci behave under the influence of quinine.

I believe firmly that quinine should have universal trial in colds and in pneumonias.

REPAIR OF PELVIC FLOOR

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(Read before the meeting of the Southwestern Medical Association, El Paso, Texas, November 21 to 23, 1935.)

Injuries to the structure of the pelvic floor are caused, largely, by stretching or tearing in parturition. Slight lacerations do not require treatment, but lacerations beneath the skin or mucous membrane should be repaired. A most distressing complication of labor is complete laceration of the perineum, with loss of gas and fecal control. Less extensive tears involving the levator ani muscles and the various layers of the pelvic fascia often cause considerable invalidism, especially if, displacements of pelvic organs develop or, normal function of bladder or intestine is interfered with.

There are now fewer extensive lacerations of the perineum than formerly, but even with the best of care there always is stretching or tearing of soft tissue in the delivery of primiparas and frequently in the delivery of multiparas. Lacerations are likely in elderly primiparas, or with any obstetric dystocia. They frequently occur with improper use of instruments and from too rapid delivery from any cause. If satisfactory repair is not done immediately, the tendency is for gynecologic hernia to develop from imperfect resistance to intra-abdominal pressure. The longer the delay in repairing the torn tissues and the greater the intra-abdominal pressure as the result of heavy work, coughing, sneezing, or constipation, the greater the tendency for rectocele, cystocele, and prolapse to develop.

Perineal lacerations are generally divided into three degrees. I like to divide them into four

degrees as I do so many other surgical conditions. A first degree tear involves only a small amount of skin or mucous membrane and superficial muscles and does not require suturing. A second degree is slightly more, involving some of the fascial planes and extends slightly into the levator ani muscle. A third degree is an extensive rupture of the levator muscles and perineal tissue right down to and exposing the anal sphincter. A fourth degree tear means complete division of all the perineal tissues, with severance of the anal sphincter and loss of rectal control. Any classification, however, is unsatisfactory, since in many cases there is only slight evidence of external tearing while muscles are extensively injured. The true condition may not be recognized at once; but when the edema subsides and sufficient time has elapsed for muscle tone to return, it will be noted that the vagina, instead of a closed canal, is open and allows air to enter. This often embarrasses the patient as the air frequently is expelled with considerable noise. This is the result of injury to the levator ani muscles, which normally hold the posterior wall of the vaginal canal in apposition to the anterior. With increase in intra-abdominal pressure, the tendency is for the levator ani muscles to contract and to give added support, which keeps the pelvic organs in normal relation. With this support lacking, it is only a

question of time until the anterior rectal wall bulges the posterior vaginal wall, making a rectocele; in many cases, even without a tearing of the utero-pubic fascia, the tendency is for the uterus to descend as relaxation of the anterior vaginal wall occurs, and for a cystocele to develop. Patients with these changes marked may complain of dragging pain in the pelvis—worse when on their feet—backache, chronic nervous exhaustion, irritable bladder and intestine, constipation, hemorrhoids, and painful defecation. It may be possible to empty the colon without making pressure on the posterior vaginal wall to hold back the rectum.

The extent of the injury is readily ascertained by inspection. It will be noted that the introitus is gaping and extends back beyond its normal limits. The anus is displaced slightly backward. On vaginal examination with two fingers, there is little or no muscular resistance to downward and forward pressure; the strong levator muscles, which normally can be felt just inside the outlet, and which give strong support posteriorly, seem to be more or less separated from the canal and to run parallel to the vaginal walls; the vagina lies in about the same axis as the anal canal, while normally it should be almost at right angles to it. By pinching the tissues with the index finger in the vagina, and the thumb close to

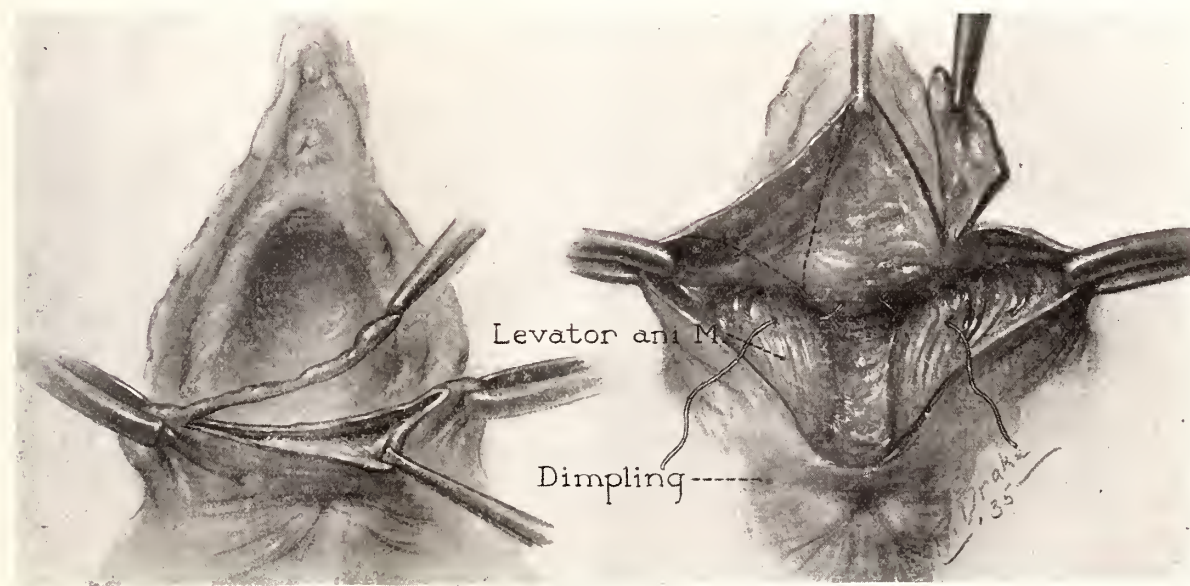


FIG. 1

Fig. 1. Left, opening the perineum; right, vaginal flap elevated, levator muscle mobilized, and sutures inserted; dimpling marks laceration of anal sphincter.

the anal margin, absence of the normal perineal body and the muscles lateral to it will be very noticeable in lacerations of the second and third degree. In complete laceration of the perineum, especially if the patient strains, the red rectal mucosa will be readily visible. The anterior ends of the torn sphincter, as a rule, in thin individuals are indicated by dimples on each side of the anal orifice.

The extent of the injury can always be better obtained by examining the patient while standing, and increasing intra-abdominal pressure. If an examination is made comparatively soon after injury, it may be difficult to ascertain the extent of the damage, especially if the patient has been in bed most of the intervening time. It is frequently advisable to examine under caudal or general anesthesia for complete relaxation.

Although the uterus gets support from suspensory ligaments, the pelvic floor is the main factor in keeping it in normal position. Therefore, an injury to the pelvic fascia and the pubococcygeus muscle, especially to the levator ani segment of it, will predispose to uterine prolapse and procidentia.

Besides the prolapse of the pelvic organs through the vaginal canal, a true vaginal hernia or enterocele is occasionally encountered and may be mistaken for a high rectocele. In these cases there are true hernial sacs of peritoneum which may contain small bowel or omentum, more rarely sigmoid or appendix

epiploica. In the great majority of cases the hernias are posterior to the uteri between rectum and vagina, but may be between base of bladder and vaginal wall.

Lacerations of the pelvic floor seldom endanger life, but cause invalidism and inconvenience.

Unless the patient is in a state of shock following delivery, it is advisable immediately to repair all lacerations; at that time an anatomic type of repair is possible, and in spite of trauma, edema, and lochia, primary union is expected.

When primary repair has not been accomplished, and rectocele, cystocele or uterine prolapse has developed, temporary help can be obtained by a well-fitting pessary, just as a truss may be worn for hernia; such treatment is not curative.

The only satisfactory treatment for neglected perineal lacerations is surgical. To cure a rectocele and reduce the size of the vaginal outlet, posterior colporrhaphy is necessary. The levator ani muscles, with their enclosing fascia, should be mobilized and brought together in the median line with chromic catgut, to hold the rectum back; a new perineal body should be constructed, thereby reducing the size of the vaginal outlet. This operation does not restore the tissue to the normal; neither do operations for hernias elsewhere. The important consideration is that normal function is restored and the patient made comfortable.

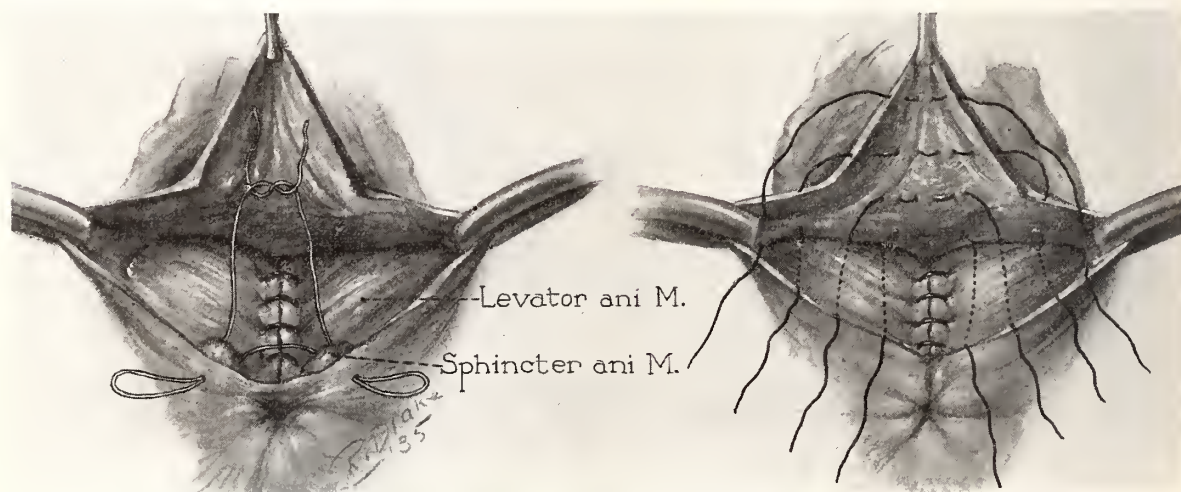


FIG. 2

Fig. 2. Left, approximation of levator muscles, and sutures that get a secure bite in the sphincter inserted; right, sutures in sphincter tied, series of crown sutures building up the perineal body and approximating the vaginal flap inserted.

When only a cystocele is present, the mucous membrane of the anterior vaginal wall is partially denuded; the bladder is advanced on the uterine cervix; the uteropubic fascia is brought in from either side by interrupted catgut sutures; and the vaginal mucous membrane is closed.

If a cystocele and uterine prolapse are both present, it may be necessary to do an interposition or a Fothergill operation, or a Mayo vaginal hysterectomy, and in some cases partial or complete colpectomy—depending on the condition present, the age of the patient, and her marital state.

With an enterocele or a true vaginal hernia, it is necessary to excise or invert the peritoneal sac and to do plastic closure of the hernial opening. This can be satisfactorily accomplished, as a rule, from below, but it may be advisable to open the abdomen and obliterate the cul-de-sac of Douglas.

Comment and Summary

Primary repair of lacerations of the pelvic floor is advisable in most cases. If the patient's condition is poor, or if assistance is necessary,

delay of 12 to 24 hours will not militate against good union of the tissues provided aseptic precautions are taken. If primary repair is not made, or is not satisfactory, secondary operation should not be attempted until infection and edema have disappeared, and the patient's general condition is good. In case of complete laceration of the perineum, an entirely satisfactory result will be obtained only if the continuity of the anal sphincter is restored; but the condition will be much improved if the edges of the levator ani are united in front of the rectum.

Gynecologic hernias develop as the result of injuries to the pelvic floor. Anatomic repair is available when possible. In neglected cases, various procedures frequently are advisable to retain a cystocele: the uterus or the cardinal ligaments may be utilized, or the broad ligaments may be approximated after removal of the uterus. In all cases perineorrhaphy also is necessary.

Ventral fixation and shortening of uterine ligaments only, will not protect against uterine prolapse if a patient is much on her feet.

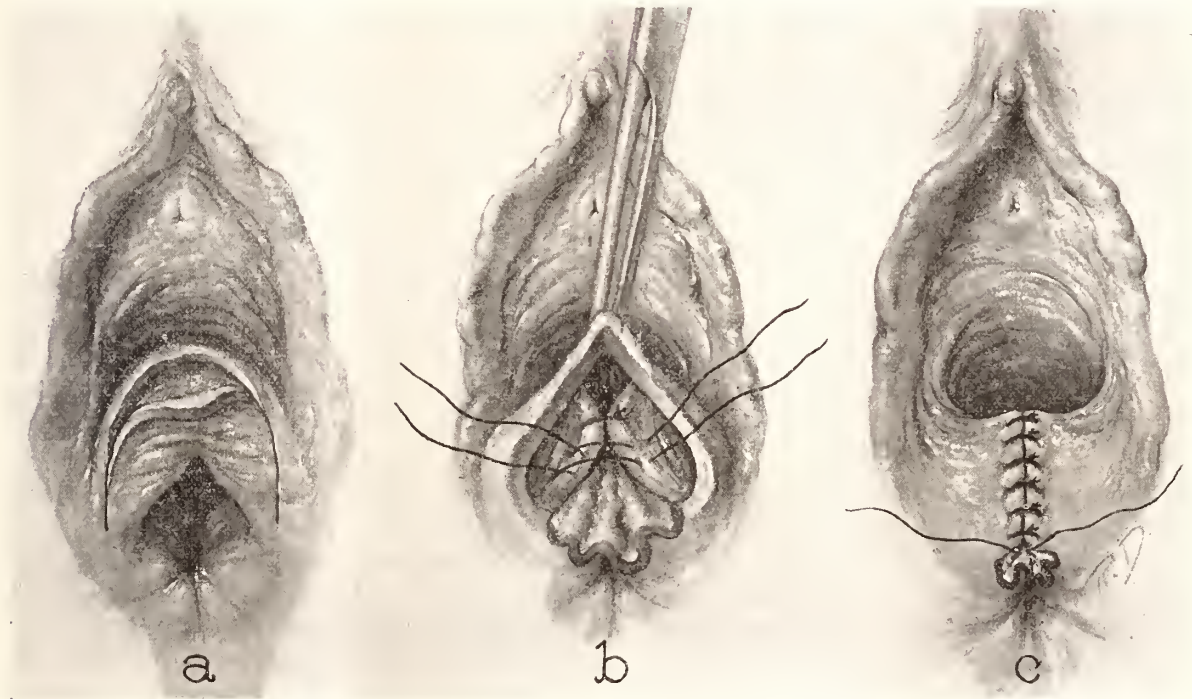


FIG. 3

Fig. 3. A satisfactory method of repair in a case in which a laceration extended up into the rectum; a, flap of mucous membrane is brought down from the vaginal surface to make a new anterior rectal wall and the rest of the repair is carried out as in figures 1 and 2.

In operating on elderly patients, with pro-
 cidencia and huge cystoceles and rectoceles,
 colpocleisis or colpectomy is advisable.

A true vaginal hernia or enterocele, with a
 peritoneal sac, may be either posterior or an-
 terior to the uterus. Repair generally can be
 effected vaginally, but a combined vaginal
 and abdominal operation may be advisable.

NERVE RESECTIONS

LESLIE R. KOBER

Phoenix, Arizona

(Presented at the Staff Meeting of St. Joseph's
 Hospital, December 9, 1935).

Nerve resections are to relieve pain, pro-
 mote rest of a part, improve function, or to
 suppress reflex syndromes.

Pain from irremediable causes such as mal-
 ignancy, advanced tuberculosis, and certain
 neuralgias making the victims' lives a veritable
 inferno, may be completely relieved by well-
 planned nerve resections.

Since most peripheral nerves have motor as
 well as sensory fibers, resection usually pro-
 duces paralysis as well as loss of sensation;
 paralysis may be preferable, however, to the
 pain. The sensory fibers of the spinal nerves
 emerge from the spinal cord on its dorsum,
 whereas the motor fibers emerge on the ven-
 tral surface; this permits a division of sensory
 without disturbing motor fibers. Of the cranial
 nerves the olfactory, acoustic and optic are
 wholly sensory; the vagus, glossopharyngeal
 and trigeminal are combined sensory and mo-
 tor. The other six are purely motor—except
 the facial carries the intermediate sensory
 nerve.

Even though the superior laryngeal, a
 branch of the vagus, is a mixed nerve, resec-
 tion produces good therapeutic results.

For facial neuralgia neurotomy or removal
 of the Gasserian-ganglion or injection of the
 nerve or ganglion with alcohol produce facial
 paralysis as well as eliminating pain. Sir Vic-
 tor Horsley² in attempting to remove the Gas-
 serian ganglion accidentally destroyed only
 sensory fibers relieving the pain without par-
 alysis. Resection of the sensory portion of the

dorsal root is now the accepted method of
 dealing surgically with trigeminal neuralgia,
 and with pain from malignancies of the face.

Intradural resection of the dorsal roots for
 pain from cancer in patients able to endure the
 operation is often recommendable; alcohol as
 suggested by Greenhill and Schmitz³ may be
 injected instead of resection and is less of a
 drain upon the patient's vitality. Pelvic pain
 has been relieved by resection of the presacral
 nerve. Section of the lateral spinothalamic
 tract of the cord is a procedure especially for
 pain from intraspinal malignancy.

To facilitate lung rest, phrenectomy gives
 favorable clinical results even though sensory
 fibers to the diaphragm are resected. Phre-
 nectomy is widely used.

Resections upon the sympathetic nervous
 system have been done—especially in recent
 years—with promising results. Since the
 sympathetics supply the blood vessels and
 viscera it would seem that in addition to con-
 trolling certain sensations resections might im-
 prove circulation to one or another part. While
 the concepts of the sympathetic system are
 largely theoretical there seems to be a close
 linkage of it with the endocrines. Sympathec-
 tomy is by resection of ganglia or of the rami
 communicantes—ramicotomy—or of perivas-
 cular fibers. With experience these operations
 are becoming less radical than formerly and
 more selective in type.

The results of a sympathetic resection in gen-
 eral is much as Leriche⁴ described for peri-
 arterial sympathectomy. There is a primary
 vascular constriction of variable duration fol-
 lowed by vascular dilation. With vascular di-
 lation comes improved function of the part af-
 fected by the resection—the temperature
 jumps up two to four degrees Centigrade, per-
 spiration increases, pulses improve, arterial
 pressure rises two to four mm. Hg. and a
 greater number of peripheral erythrocytes
 and polymorphonuclear leucocytes result. The
 maximum improvements accrue in four to six
 days and are maintained 16 to 40 days.

In conditions in which 30 to 40 days of im-
 provement of circulation may be productive
 of good results the operation is indicated. The
 good results are not always confined to the
 part supplied by the resected nerves but
 may be in a homologous limb or even general.

Along with the improved circulation and the good that goes with that may be loss of pain of angina pectoris, improvement of asthma, colitis, hypertnesion, etc., in properly selected cases, and operations.

Periarterial sympathectomy has helped certain painful phenomena such as ascending traumatic neuritis, painful amputation stumps, the causalgia of Weir-Mitchell due to trauma of an artery and nerve or to a muscular injury, vasomotor diseases such as Raynaud's disease, acrocyanosis, acroparesthesia, and acute or chronic unilateral traumatic edema arterial diseases such as aneurysm or thrombosis in chronic ulcer, due to trauma, burns, leprosy, callous formation following fracture, traumatic osteoporosis (Sudek's disease) or painful post-infective osteoporosis following rheumatism or gonorrhea, and certain skin diseases.

Ramicotomy—ramisection or ganglionectomy—has been employed in spastic paralysis of Little's disease, Parkinsonian disease, and related conditions visceral syndromes such as angina pectoris⁶, hypertension⁷, bronchial asthma⁸, tabetic crises, spastic colon, megacolon, and cardiospasm⁹, and in painful syndromes of the extremities and vasomotor disturbances where periarterial sympathectomy proved not entirely satisfactory.

In 1922 surgeons were divided into two groups as to the effect of removing sympathetic ganglia, particularly the stellate or first thoracic ganglia which carries motor fibers from the heart. It had been shown on experimental animals that removal of the stellate ganglia acceleration of hearts on exertion did not occur and the heart seemed to contract superficially and without force. Clinically, in some cases ganglionectomy was succeeded very rapidly by death.

Many ganglionectomies performed since, both on man and dog, even both stellate ganglia removed and followed for years showed no cardiac complications clinically or with the electrocardiogram. Hence the early fears of impaired cardiac function were unfounded; the cardiac accidents likely were due to defective technic.

In general periarterial sympathectomy or ramictomy may be employed **judiciously**—periarterial sympathectomy for localized disturb-

ances and ramicotomy for diffuse phenomena.

Summary: The general indications for nerve resection are:

A. In the peripheral cerebrospinal nerves: Relief of pain and promotion of local rest through local muscular paralysis;

B. In the sympathetic nerves: Relief of pain, promotion of improved function through circulatory modifications and suppression of certain reflex syndromes.

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2. Garrison: History of Medicine.

3. Greenhill, J. P. and Schmitz, H.: Intraspinal (subarachnoid) injection of alcohol, J.A.M.A. 105: 406-409, 1935.

4. Leriche, R.: Nelson's Looseleaf Surgery.

5. Bird, C. E.: Sympathectomy as a Preliminary to the Obliteration of Politeal Aneurysms. Surg. Gynec. and Obst. 60:926 May, 1935.

6. Coffey, W. B. and Brown, P. K.: The Surgical Treatment of Angina Pectoris, Arch. Int. Med. 31:200-220, 1923.

7. Cutler, E. C. and Fine, J.: Sympathectomy in Angina Pectoris, J.A.M.A. 86:1972-1979, 1926.

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NEWS ITEMS

Dr. and Mrs. A. L. Gustetter have recently returned from a short trip to Los Angeles.

Dr. and Mrs. Charles S. Smith have returned to Nogales following a two weeks trip to Los Angeles, where the doctor attended the Mid-Winter Clinical Course in eye, ear, nose and throat.

Everything is being made ready by the Santa Cruz County Medical Society for the entertainment of the visiting doctors and their ladies at the annual meeting of the Arizona State Medical Association to be held in Nogales April 23, 24 and 25. Just remember all of the valuable prizes to be given away, the special excursion to Guaymas (Old Mexico) and other entertainment features too numerous to mention. We'll be expecting YOU and your LADY.

STUDIES ON THE NATURE OF PHAGOCYTOSIS

ZEBUD M. FLINN

Prescott, Ariz.

(Continued from January issue)

At the end of 24 hours there were always large numbers of leucocytes after intraperitoneal injections of bacteria, most of them actively motile. At this time clasmotocytes had begun to appear in considerable numbers. These were large cells varying in length from 20 to 30 micra, with oval nuclei and vacuolated cytoplasm. They contained few or no mitochondria and no radial arrangements of

neural red. Monocytes did not appear until later and were most concentrated at the end of 72 hours when they composed about 60 per cent of the total cells, and about 90 per cent of the phagocytizing mononuclears. They varied in size from a normal leucocyte to the medium sized clasmatocyte. It was formerly believed, quite generally, that the burden of the defense of the body against acute bacterial invasion rested with the polymorphonuclear leucocytes of the blood stream, and it is fairly well established that in the blood stream itself and, in the early stages, in serous cavities the most active phagocytosis is a polymorphonuclear process. However, there is much evidence that macrophages of the reticulo-endothelial system possess a definite and important function. Frequent observations have been made of phagocytosis of various microorganisms by mononuclear wandering and fixed tissue cells, particularly in the spleen, the alveoli and capillaries of the lungs and in the Kupfer cells of the liver, but we shall not consider these further as we are particularly concerned with the polymorphonuclear leucocytes of the blood stream in this study.

Chemotaxis.

The part played by the phagocytic cell in the defense of the body against bacteria and other foreign substances consists of two functionally different phases. The first is an active motion of the cells toward the point of attack, and their accumulation about the invading agent; the second consists in the act of ingestion itself. The motion of the leucocytes toward the invading substances indicates a sensibility on the part of the cell to change its environment, incited by the foreign agent, and since the stimuli most likely to reach the leucocytes and bring about this alteration in the direction of their movements are chemical in nature the phenomenon is known as "chemotaxis." Since the change of direction brought about in a moving cell by such influences may be such as either to attract or repel, the term "positive chemotaxis" is used to designate the former and the term "negative chemotaxis" for the latter. The stimuli which determine the motion of the cells are, of course, not necessarily chemical, and extensive studies have been made upon the effect of light in this connection. Although these investigations are of great biological importance they have little

bearing upon the problems of tropism as related to bacteria and leucocytes and cannot be considered here.

Studies on the factor determining the movement of bacteria and amebae toward some substances and away from others have been numerous, and have led to the formulation of many theories. That the motions of bacteria in suspension are, to a certain extent, determined by the electrical charge which they carry (in a neutral medium) has been touched upon already, but attempts upon the part of Zinsser and Young to determine whether the attraction of leucocytes toward bacteria might be due to the carrying of opposite electrical charge met with negative results.

The chemotaxis of leucocytes has been difficult to study, since conditions within the body are so complex and experiments upon living cells in vitro, even under conditions of the most careful technique, involve injury to the cells. At any rate, enough has been learned to indicate that these cells are subject to the phenomena of chemotaxis or tropism just as are independent unicellular forms, and that they may be attracted or repelled by a variety of organic and inorganic substances. Leber observed that dead bacteria exerted a positive chemotactic influence on leucocytes and later succeeded in extracting substances from various bacteria which possessed this property. It appears from these, and other investigations that the power of stimulating positive chemotaxis is a general property of bacterial proteins, equally apparent in bacterial extracts, dead bacteria and the living organisms. It is likely, therefore, that the attraction of leucocytes toward the point of bacterial invasion is, in part at least, due to the bacterial proteins. That this is not the whole story, however, is evident from the work of Massart and Bordet who showed that the products of tissue cell destruction possess similar positively chemotactic properties. This is true even of destroyed leucocytes. Thus, it appears that when an injury of tissue takes place, a stimulus which attracts leucocytes results, even when the injury is not accompanied by bacterial invasion. This explains the participation of leucocytes in reactions to injury, not of bacterial origin, for example the injection of insoluble inorganic substances.

We have seen that the action of leucocytes

in moving toward some substances and away from others is analogous to a similar phenomenon in unicellular life, and the explanations applied to the apparently purposeful acts of the amebae, such as the motion toward and the engulfment of food, have been applied to leucocytes as well. Many of the theories developed concerning the free living forms have been easily excluded in the leucocytes however, because of the environment in which their activities are developed. Thus, the interesting reactions of paramecia and other organisms to light have little bearing upon this subject, and the views based on the theories of orientation may be excluded on the ground of the symmetry of the normal leucocyte.

Although the phenomena of chemotaxis are most easily studied in extravascular inflammatory changes, there is, nevertheless, a regular and apparently purposeful attraction or repulsion of leucocytes in the circulating blood during infectious diseases (18). That infection of the body with many micro-organisms results in an increase in leucocytes, and that in others there is either no increase or even a decrease is generally known, yet the causes of leucocytosis in one case, and of leucopenia in the other are still, to a considerable degree, unclear.

While the leucocytic movement under chemotactic stimulus is not concerned to any extent in ordinary opsonic phenomena with bacteria, it has sometimes played a part in phagocytosis *in vitro*. Comandon (19) has shown that in the phagocytosis of starch granules by frogs' leucocytes *in vitro* the latter move in straight lines toward the granules and then ingest them, true chemotactic attraction thus being concerned. On the other hand, he found that there is no such attraction in the case of carbon particles, the ingestion of which is a physical phenomenon of capillary adhesion.

Leucocytosis.

It is not entirely clear whether leucocytosis signifies an active discharge of new leucocytes from the bone marrow or whether it means simply an altered distribution, in that the phagocytes accumulated in the lymphatic or other organs are attracted into the peripheral circulation. Studies of the bone marrow during infection, as well as the occasional appearance of myelocytes and other cells ordinarily found only in the bone marrow during health, would point toward participation of active bone mar-

row hyperplasia in increasing peripheral leucocytes. There is no good reason to doubt that a chemotactic stimulus exercised in the circulation should withdraw leucocytes from any place of accumulation to the circulation. Probably both processes take part.

When bacteria are injected into the circulation of an animal there is, at first, a moderate diminution of the leucocytes just as there is after the injection of bacteria or other substances into the peritoneum. This is soon followed, in some cases, by a rapid increase in which the polymorphonuclear neutrophiles preponderate. The extensive clinical studies of the white cells in infectious disease of human beings give us more material for reasoning along these lines than we have available from animal experiments. Infection with invasive bacteria such as pneumococci, streptococci, staphylococci, and others, is always accompanied by increase of leucocytes, while in typhoid fever, influenza and tuberculosis the leucocytes do not increase and even may be decreased. We cannot account for this in any way and dare not venture an opinion in the absence of both theoretical and practical data. That all bacteria contain substances which are positive in their chemotactic effects is easily demonstrated by injecting them into the peritoneum and observing the accumulation of leucocytes. A final explanation of these conditions is not possible at present, nor has an adequate explanation for the selective accumulation of lymphocytes and the absence of polynuclear cells about tuberculous foci been advanced. The absence of polynuclear cells may possibly be due to the insolubility of some of these bacilli, in consequence of which little or no leucocytosis-stimulating substances are liberated.

In infections with Gram-positive cocci and with many organisms in which there is no question about the fact that protection is mainly dependent upon phagocytosis, there is always a powerful leucocytosis, except in conditions of an overwhelming infection or at stages when the resistance of the body has been overcome. In diseases like typhoid fever and influenza where leucopenia is the rule it is possible that diminution of leucocytes result from toxic injury of the bone marrow and other hematopoietic organs. In these diseases it is also known that a considerable amount of

actual destruction by the sensitizer-alexin activity of the blood plasma occurs, in consequence of which endotoxic substances may be liberated. In typhoid fever where the slight primary leucocytosis is rapidly succeeded by leucopenia, with a relative monocytosis, the conditions are illustrative of this. Here, as in some other infections, we are dealing with a generalized infection by organisms easily subjected to the action of serum antibodies. The liberated cell constituents seem to exert a negative chemotaxis, and probably during the height of the disease give rise to the low leucocyte count observed. That this is likely seems to follow from the studies which have been made upon the nature of typhoid poisons, and from the observations of Gay and Claypole (20) that typhoid-immune rabbits react to the infection of typhoid bacilli with a rapid and powerful increase in the polymorphonuclear leucocytes, whereas similar injections into normal rabbits leads to leucopenia.

If the supposition regarding tuberculosis, made above, is correct it would follow that a sudden and considerable increase in polynuclear leucocytes in a case of tuberculosis would indicate a discharge of organisms into the circulation and a tendency toward generalization of the infection in this manner. However, (speculation is sometimes justified) it must not be forgotten that the problems of selective chemotaxis are too obscure to permit laying of much weight on any of these views.

Gay and Claypoles' work has not been universally confirmed, and McWilliams found no difference in the degree of leucocytosis between normal and immune animals in their response to the injection of bacteria, and later reported that the same degree of response followed in typhoid-immune animals when injected with *B. coli* as when typhoid bacilli were used. In part, this has been the experience of several other workers.

Zinsser and Tsen (21) found that when homologous Gram-negative bacilli are injected into immunized animals there seems to be a definitely higher leucocytosis in the immunized animals than in normal controls similarly treated. They reported, though, that their experiments did not give nearly as striking results as those recorded by Gay and Claypole.

It seems reasonably clear then, that animals react more energetically as far as their mobili-

zation of leucocytes is concerned when reinjected than do normal animals treated with the same variety and quantity of bacteria.

When immune animals are treated with heterogeneous bacteria, that is, when prodigious bacilli or colon bacilli are injected into typhoid-immune animals, and vice versa, there seems to be no specific difference in response. In other words, the injection of colon bacilli into typhoid animals has shown no marked difference in leucocytic response from that observed when typhoid bacilli were injected into typhoid animals. The injection of leucocytic extracts does not arouse as vigorous a leucocytic response as does the injection of bacillary protein.

To summarize: Specific leucocytosis has not been demonstrated, but an animal immune to one organism will have a slight non-specific increase of resistance to other organisms.

MEDICAL ANNALS OF ARIZONA

By ORVILLE HARRY BROWN, M. D.

Phoenix, Arizona

CHAPTER II.

MEDICAL MEN OF ARIZONA DURING THE CALIFORNIA GOLD RUSH PERIOD AND THE FIRST PHYSICIAN TO ACT- UALLY LOCATE IN ARIZONA.

Many who first settled in or visited Arizona in the early day—physicians as well as others—did so during the hectic days of the California gold rush. In that great migration were great numbers of doctors, lawyers, merchants and others who left their homes in old settled communities, to seek wealth or adventure, or both in the vast, unexplored stretches of western America.

As trail-blazers, Indian fighters and miners, the doctors proved themselves just as hardy, daring and courageous as any who crossed the deserts and mountains through dangerous Indian country to California's golden streams. Few of them lingered by the way while hurrying to the goal of their dreams; many, however, after reaching the gold fields, retraced their steps to their former homes or wandered elsewhere, disappointed, perhaps, over their luck or the hard living conditions in the rough mining camps of the west.

The ease with which fortunes were made in the newly discovered El Dorado had been spread far and wide, and few of the young and vigorous, regardless of station in life, were able to resist the call 'On to California,' that was heard throughout the eastern states, following the discovery of gold on the Pacific Coast. The uprising was as if by magic; wherever, and as rapidly as the news spread men dropped their tasks and joined the long caravans heading toward the Golden State. They started from every section of the East and were soon pouring, by the hundreds, into California. It is safe to say that Marshall's accidental discovery of the precious metal, on January 24, 1848, influenced the fortunes of millions of individuals and put a new face on the affairs of the civilized world.

Dr. O. M. Wosencraft and others in New Orleans, Louisiana, formed a company in the winter of 1848-49 for the purpose of going overland to California. Coming by way of Brownsville, Texas, and the Rio Grande, the Wosencraft party went through what is now southern Arizona, then a part of the Republic of Mexico. They crossed the Maricopa plains near the big bend of the Gila, arriving at the Colorado River below the Gila; there they found a dilapidated rawhide boat which, after repairing, they used in ferrying the river.

At the time of Dr. Wosencraft's arrival at the Colorado Yuma Indians were preparing to make an attack upon a small party of whites. They had already taken possession of the horses and were about to dispatch the unfortunate travelers with their murderous clubs—favorite weapons among this tribe of savages. The white party consisted of four persons who were in advance of a larger party that was bringing a drove of mules from Tepic, Mexico, to the Almaden Mines, in Santa Clara County, California. The timely arrival of Dr. Wosencraft and his companions saved the lives of the four men.

After crossing the river the Wosencraft party continued to California, glad to leave behind them the country of the fierce Apaches and the treacherous Yumas.

Dr. Charles Wilkins Webber, Frontiersman, Physician, Theologist, and Journalist, born in Russellville, Kentucky, in 1819, came to the Southwest as a youth and joined the famous Texas Rangers, with which organization he

saw much of the wild frontier life of that day. He afterward studied medicine and then turned to theology, but soon abandoned both professions and took up journalism, working on several widely known newspapers of the East. By nature he was restless, and in 1849 organized an expedition to the Colorado and Gila rivers for the purpose of exploring the mineral possibilities of that region. Upon his return from this journey he wrote a book entitled "The Gold Mines of the Gila." He was also the author of a number of other volumes dealing with western subjects and adventures. In 1855 Dr. Webber went to Central America and was killed in Nicaragua while a member of the filibustering party commanded by William Walker, famed as a filibusterer and adventurer.

The Medical Companion of the Howard Family: The next doctor—his name, unfortunately, not now known—to traverse the country that later became Arizona, was present at an event that is now a part of Arizona's early history. This incident is referred to in Bancroft's history of Arizona and New Mexico in the following words:

"The first of November, 1849, there arrived, at Yuma, a flat-boat which had made the voyage down the Gila from the Pima villages with Mr. Howard and family and two men—a doctor and a clergyman—on board. During this voyage a son was born to Mrs. Howard, perhaps the first child of American parents born in Arizona, and named, as Lieutenant Coutts tells us, GILA, from the fact that he was born on the river of that name.

The Howard craft was made in the east and was suitable for both land and water travel and, upon reaching Yuma Crossing, was purchased from the Howard family by Lieutenant Coutts who used it as a ferry across the Colorado for emigrants on their way to California. The Howard family and their traveling companions continued into California and, in 1884, Gila Howard, Arizonan, was living in Lake County, in that state.

Another doctor who was a California 49-er but left its mining camps to wander across northwestern Mexico, was **DR. ABEL B. LINCOLN**, whose name is now inseparably linked with the earliest history of Arizona—especially with that centering about the Colorado River in the vicinity of the site that later became

Fort Yuma. Early in the year 1850, Dr. Lincoln established a ferry with regular service on the Colorado River, just below its junction with the Gila on the former site of Lieutenant Coutts' Camp Calhoun. Most of the money for the establishment of this ferry was furnished by Mr. J. P. Brodie, an American resident of Hermosillo, Sonora, Mexico, who retained an interest in the enterprise. Dr. Lincoln and his associates constructed a stockade on the California side of the river, which was called FORT DEFIANCE and in which they established their headquarters.

After operating the ferry for a short time Dr. Lincoln took in, as a partner, John J. Glanton, of Texas, who, it is said, had been the head of a band of outlaws employed by the state governments of Sonora and Chihuahua, Mexico, to gather Apache scalps at 100 dollars for each brave, 50 for each woman and 25 for each child. The business seems to have been lucrative for Glanton and his former outfit. It is said that they did not stop at the acquisition of Apache scalps, but added to their hirsute collections those of friendly Pimas, Opatas and Papagoes. Upon the discovery of their treachery and duplicity by the Mexican authorities, the Apache hunters had to leave the country hurriedly, their departure being expedited by the knowledge that capture meant death.

John J. Glanton, history records, originally came from the state of Tennessee. For some years before coming West, he had been an inmate of the Tennessee penitentiary but through the intercession of influential friends who had known him in his younger years when he gave promise of becoming a useful man, he was released. He had been a member of the John A. Murrill band of outlaws, who infested the Lower Mississippi Valley in the 1830's and early 1840's, and for depredations committed while a member of that gang, he was sent to the penitentiary. He had chosen the evil side of life and apparently was past reformation; his tragic death on the Colorado was in keeping with his rough and abandoned existence.

The Glanton crowd started for California, reaching the Colorado River, and purchased an interest in the Lincoln Ferry. While this business connection gave Glanton and his followers an improved standing, it furnished them, at the same time, an excellent opportunity to commit many atrocities and depreda-

tions upon unsuspecting travelers. Lincoln, of course, accepted the Glantons at what they appeared to be. It was not then the custom nor the part of wisdom to inquire much of who and what a man had been.

An Indian ferry, managed by a white man said to have been a deserter from the army, was in operation a few miles down the river. The Glanton crowd, certainly without the knowledge or approval of Dr. Lincoln, in order to obtain a monopoly of the transportation business, assassinated the Indian ferry manager, killed two Indians and destroyed the ferry boat.

These high-handed proceedings, murders and robberies committed by the Glanton's, though attributed by them to the Indians, brought upon the Lincoln ferry the wrath and enmity of the Yumas who decided to wipe out the whole outfit. On April 23, 1850, the murderous plans were carried out by the outraged savages who succeeded in slaying all but three of the group of white men engaged in operating the ferry. Eleven members of the Lincoln-Glanton party were killed, including the two leaders. The three ferrymen who, after a desperate battle, escaped death at the hands of the infuriated Yumas, managed to get away and finally reached Los Angeles. The ferry property and equipment was taken by the victorious savages, who destroyed what they could not use.

Just before his tragic death, Dr. Lincoln had written a letter to his parents, then visiting at St. Louis, Missouri, which was transmitted to them by his three surviving companions after their arrival at Los Angeles. This epistle, now a historic document in the annals of Arizona, throws much light on the Lincoln enterprise on the Colorado and is as follows:

"April 17, 1850.

Lincoln's Ferry.

"Dear Parents: I presume this letter will somewhat astonish you, when you observe my location, and as I have but a short notice of this opportunity of sending a few lines to the office, I have not the time to give you the particulars, only that I have located a Ferry at the junction of the two rivers, the Gila and the Colorado. This is the first and only ferry that has ever been established on this river. I have been here some three months, during which time I have crossed over 20,000 Mexi-

cans, all bound for the mines and I am still carrying some 100 per day.

"During the three months that I have been here I have taken in over \$60,000. My price—\$1 per man—horse or mule \$2—the pack \$1—pack saddle 50 cents—saddle 25 cents. But my expenses are high. I have 12 Americans—deserters of the army—that I am paying \$100 per month, also 10 Mexicans that I pay \$40 each. These men I have all armed with Colts revolvers for which I paid \$75 each, for I purchased them of a New York company of emigrants that were emigrating to California. I also have 16 U. S. rifles and a small piece of artillery which I purchased of the American consul at Guymas, Mexico.

"In addition to this I have to pay \$20 per bushel for corn meal, 75 cents per pound for flour, unsifted, and for dried beef (the only meat I can get) I pay \$1.90 per pound. For coffee I pay \$4 per pound and all things according. My only reliance of anything to eat is of the Mexicans as they pass to the mines. From the enormous prices I have to pay for everything here you can well imagine what my profits are. I am nine days travel, as the fellow said, from any place, and I can go to no point, either way from this place, without passing through extensive plains destitute of both grass and water.

"The country is entirely inhabited by Indians and that without number. Their principal pursuit is stealing and robbing. They have made repeated declarations of friendship to me but have at different times proved themselves otherwise. They wear no clothing and have no regular place of living but are continually migrating from place to place, as it were, in search of prey. As regards my stay at this point I can give you but little satisfaction at present. I shall not remain longer than six months at all events and perhaps not more than one month. I shall sell at the first opportunity and make you all a visit if I meet with no misfortune. This is an unsafe place to live in and, in addition to that, this rush of emigrants will shortly cease, in a great measure, as the Mexicans are generally going to California to live.

"A few words in regard to the mines and I am done. As regards the gold in California there is a plenty and it is to be obtained by any one that will labor for it, or that is capable

of managing business. I was at the mines but did no work in them, as you all well know.

"I shall go to San Francisco in about 30 days and by that time I shall know what I am going to do and, if I should not go immediately home from here, I will make arrangements there with some mercantile house that is connected with a house in Orleans, to furnish Nathan and Harry, or as many of you as wish, with means of conveyance by ship to San Francisco.

"Your son,

"A. LINCOLN."

When the letter of their unfortunate employer was forwarded to his parents by the three survivors of the river tragedy, they wrote the following letter of explanation which describes in detail the terrible massacre:

"Los Angeles, May 10th, 1850.

"My dear Sir: Enclosed you will find a letter written by your son just before he was massacred on Red River Calhoun Ferry, on the 23rd of April, 1850, by the Umah Indians. It is a painful duty to be called upon to render a faithful account of the massacre, yet I feel unwilling that any stigma should rest upon my companions. At the same time John J. Glantton. of Texas, Thomas Harlin, John Johnson, Henderson Smith, William Pewit of Texas, Thomas Wilson, Philadelphia, John Dorsey, Missouri, J. Gunn, Missouri, James M. Miller, New Jersey, John Jack (Negro), New York. were massacred.

"The Indians professed the utmost friendship for the party, so much so that we had the utmost confidence in their profession. They manifested it in many ways by acts of kindness towards us all. The head chief dined that day with your son, after which we went out to cut poles to fix a small launch. Whilst in the woods cutting poles some five or 20 Indians came out and informed us that the captain had sent them to carry poles to the house.

"One of the Indians asked Webster to let him have the hatchet, which he did, not paying any attention to him, yet Carr had his eye on him and saw him commence chopping on a tree just above his head, when he said to Webster take your hatchet and the Indians said "look out" and then run for the house as fast as possible; we followed. On leaving the bushes about 20 rifles were fired at us and many arrows came from different directions. However, they had over 400 warriors and we being

only three in number made them run for their lives. Carr took to the house but could not reach it. I and Webster made for the boats to see what was going on, but the Mexicans told us that they were all dead. After killing all in the boat, they dressed themselves up in our men's clothes, which deceived us and led us to believe that our men were still living, we fighting all the time. Carr called to the men to come over.

"A Mexican woman was sewing in your son's tent and says that the head chief, 'Cavioen,' knocked the doctor in the head with a stone. The doctor, rising on his feet, was struck with a club and killed instantly. Glanton was served in the same way by another chief, whilst they both were sleeping. We cannot learn how the other men met their death. We have passed through much in the last few days and we feel exhausted. My hand refuses to write such melancholy tidings. Allow us—companions of your affectionate son—to sympathize with you in your deep distress, hoping that an ever-ruling Providence may give you strength to bear up against such sad affliction. Out of 17 there is only living three of us, William Carr, Canada, Marcus L. Webster, Texas, and Joseph A. Anderson, Washington, D. C.

"Hoping soon to hear from you and trusting that health and happiness may follow you through life,

"Truly your obedient servants.

"JOSEPH A. ANDERSON,
MARCUS L. WEBSTER,
WILLIAM CARR."

"To N. Lincoln,
St. Louis, Missouri.

"P. S. Your son's letter is dated the 27th of April, 1850, which is incorrect. We had no almanac and of course no time was kept. This you will perceive was owing to our taking no note of time.

"Yours,
J. A. A."

(The above letters are copies of the originals—*verbatim et sicut*.)

While the Yuma Indians were, as a rule, ready to help the early emigrants in crossing the river, the temporary ferries of Lieutenant Coutts and Colonel Carrasco, of the Mexican Boundary Commission, also gave them, for a short time, much-needed aid; the

first regular ferry across the Colorado River was, unquestionably, the one established by Dr. Lincoln and known as the Lincoln Ferry.

The attack on the ferrymen by the Yuma Indians was probably not unexpected, as this tribe had always displayed an unfriendly attitude toward the whites who first invaded their country. Most of their killings and massacres, however, were accomplished by treachery, after the suspicions of their intended victims had been allayed by manifestations of friendship.

Dr. Abel B. Lincoln, victim of this almost-forgotten Colorado River tragedy, was the son of Nathan Lincoln, of Litchfield, Illinois, and had gone to California during the gold rush; tiring of life in the mining camps, he went to the west coast of Mexico, thence to the Colorado River, where he established his ferry and succumbed to the treachery of the Yuma Indians.

The doctor belonged to the older group of Lincoln children, having been born in the State of New York on May 15, 1820, the third child in the family. There is no doubt that he practiced medicine while at Lincoln Ferry, probably among those of the Yumas who were friendly, as well as among his own employees and those emigrants reaching the river who may have needed or desired medical attention. He probably also practiced dentistry in a limited way, giving attention to the simplest requirements, such as extracting teeth and treating mouth infections.

It is stated upon fairly good authority that Dr. Lincoln came west with Fremont's Expedition of 1848, and found himself in Alta, California when gold was discovered at Coloma. Dr. Lincoln himself states in his letter that he had been at the mines but had taken no part in mining operations.

The Lincolns were originally a Massachusetts family, Nathan Lincoln moving from there to New York, and thence to Litchfield, Ill., where he resided perhaps a dozen years; he was a patriotic man and served in the army during the war of 1812; he was the father of a large family, being twice married; by his first wife, who died while yet quite young, he had two children, and from his second marriage he was blessed with 10 children; in the early 50's, not long after the death of his son Dr. Abel Lincoln, he removed to California—

going by water from New York via Cape Horn—and resided in the section of the state lying to the north of the San Francisco Bay country; he died at an advanced age and is buried in the old cemetery in the little town of Vacaville, Solano County, California.

The Lincolns continued to reside in the west and throughout the Pacific Slope today can be found many descendants of this New England family. Two of them are now residents of Arizona—Daisy Maude (Lincoln) Lockwood, of Phoenix, and Clement L. Lincoln, of Safford; the former is a daughter of Edgar Lincoln, a brother of the ill-fated Dr. Lincoln, and is the wife of Judge Alfred C. Lockwood, of the Arizona State Supreme Court. Clement L., a grand-nephew of Dr. Lincoln, is of a later generation. He is connected with the U. S. Forest Service. Edgar Lincoln, Mrs. Lockwood's father, was born in 1840, and was the 11th child in a family of 12.

Mrs. Lockwood's information concerning Dr. Lincoln and his activities is given in the following paragraphs:

"Dr. Abel Lincoln's tragic romance began when he fell in love with a Missouri girl whose fortune exceeded his own. A young medical graduate, he determined to seek his fortune in the West, in order to match hers. He joined Fremont's 4th Expedition,* which set out to find a pass for a Pacific railroad in the latter part of 1848, guided by Bill Williams. This journey, along the Rio Grande and through northern Mexico, occupied many months, and the party reached California in 1849, to be greeted with news of the gold rush. Apparently Dr. Lincoln visited the mines, but his interests did not lie there, and in the early part of 1850, probably in the latter part of January, he turned east to the junction of the Gila and Colorado rivers, at Yuma, where opportunity seemed to welcome him in the guise of a ferry for the emigrants who were crossing the Colorado in great numbers. At Yuma he practiced medicine and a crude form of dentistry, his patients probably being comprised of his employees, Indians and some of the Mexican and American emigrants.

"Dr. Lincoln purchased from Lt. Cave J. Coutts the small craft which he had used for a short time to ferry emigrants across the Colorado, enlarged it and built a second boat. Shortly after Dr. Lincoln's arrival at Yuma,

one John Glanton appeared upon the scene and, together with one C. O. Brown, formed a partnership or "Company." Lincoln was made "Captain," Glanton second in command, and Brown treasurer.

"A certain army officer, named Anderson, had built a small boat to carry his family and effects across the river a short time before Lincoln's advent, and had then sold it to the Indians who operated in competition with the "white" ferry, and it was probably the chief contributing cause of the massacre, as Glanton and some of his immediate followers destroyed it and killed a number of the Indians.

"At the time of the massacre, Lincoln's housekeeper, a Mexican woman, was sewing or cooking in his tent, and rescued the letter he had just finished writing to his parents, hiding it in her blouse. She had seen one of the Indians kill Lincoln with a war club, and then she fled, with her husband and 14-year-old son, down to the river, where they managed to cross to the California side. There they met Carr, Webster and Anderson, the only other survivors of the carnage. These three and the Mexican family went on to Los Angeles, and the latter lived in that city for years. Brown had left before the massacre began, and afterward resided in Tucson.

"Uncle Abel, the third son of my grandfather, Nathan Lincoln, was born in the state of New York, May 15, 1820. My father was the 11th son of Nathan, born in Illinois, May 7, 1841. In 1850, the date of Uncle Abel's death, my father, then but nine years of age, together with his mother and several small brothers, sailed from New York, via Cape Horn, to take up their residence in California. Grandfather Lincoln had gone there in 1849.

The Lincolns were, as is well known, typical pioneers of America, but, so far as we can ascertain (from many family records), none was in any sense knowingly connected with criminal enterprises, although they may have been unfortunately and unwittingly associated with the 'bad men' to be found upon every frontier, as in Dr. Lincoln's case. In early Western days, it was neither "good form" nor a healthful matter to inquire closely into the genealogy or the past of any man. Glanton appeared upon the scene soon after Lincoln's arrival at Yuma, and being accepted upon his

(Continued on page 72)

Southwestern Medicine

Printed by THE A. C. TAYLOR PRINTING CO., Phoenix, Arizona
Published monthly for the Board of Managers of the four constituent societies.

VOL. XX.

FEBRUARY, 1936

No. 2

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THE RADIO DEBATE

We have just read the radio debate between William Trufont Foster and Bower Aly for the affirmative and Morris Fishbein and R. G. Leland for the negative. The affirmative perhaps may have had a bit the best of the argument. We can not tell how it seemed to a layman; but to us the affirmative may have had the advantage in that they were arguing from an idealistic basis whereas the negative were arguing from a practical, and ordinary every day standpoint. There is no question but what in theory a system of practice is constructable which might appear immeasurably superior to any system of actual practice.

It seems to us that those arguing against state medicine failed to make use of the argument that we must deal with facts and not theories. The affirmative argued almost wholly on a theoretical basis.

It would seem that if state medicine were far superior to that which we now have in America, the incidence and death rate from diphtheria, small pox, malaria, and other preventable disease would be extremely low in countries that have systems of state medicine. When compared with the incidence of and death rate from those same diseases in America, such is not the case.

The SANTA CRUZ COUNTY MEDICAL SOCIETY is being extremely active in an endeavor to promote an excellent meeting of the Arizona State Medical Association April 23-25 inclusive. The committee has mailed each physician in the state of Arizona a blotter with the following announcement upon it:

DOCTOR! We're expecting you and your lady in Nogales April 23, 24, 25, 1936—Annual

Meeting of the Arizona State Medical Association.

1. One of the BEST programs in the history of the association.
2. Separate Section meeting, Eye, Ear, Nose and Throat Specialists.
3. Separate Section meeting Mexican Physicians.
4. Numerous outstanding Scientific Exhibits.
5. Many splendid Commercial Exhibits.
6. Splendid—unusual—entertainment features for both men and women.
7. You've heard about the "Cock-fight." Don't miss it.
8. Special excursion to Guaymas (Old Mexico) On-The-Gulf. Make your reservations early.
9. Complete details of the meeting will be sent you later.

Of course, YOUR FRIENDS are invited to go with us to Guaymas.

DALLAS SOUTHERN CLINICAL SOCIETY

Plans for the Eighth Annual Spring Conference, March 16-19, inclusive, 1936, are complete. A greater attendance than ever before had is expected; practically 1000 were registered at the Conference of 1935.

In its program this year exceptional attention has been given to the canvass of the questionnaires returned by the doctors that attended the 1935 Conference and every possible effort has been made to fashion this year's program to the desires expressed in the questionnaires.

Two outstanding features of the Conference

are: First, an opportunity to visit Centennial Park, admission by registration badges, where the visitors may see how approximately twenty millions of dollars are being spent to convert Dallas into the Texas Centennial Exposition Center of 1936; one may play golf during the Conference on the course of the Lakewood Country Club. His registration badge will be accepted in lieu of greens fees and his best card of play will be chosen as his entrant in the trophy race; a large number of trophies are provided.

Endeavoring to secure outstanding medical men to represent each section of the country, the following list of distinguished guest speakers will appear during the Conference:

Dr. B. R. Kirklin, Rochester, Minn.—Roentgenology.

Dr. Walter A. Wells, Washington, D. C.—Otolaryngology.

Dr. Verne C. Hunt, Los Angeles, Calif.—Surgery.

Dr. Foster Kennedy, New York City—Neurology.

Dr. E. C. Ballenger, Atlanta, Ga.—Urology.

Dr. Hans Barkan, San Francisco, Calif.—Ophthalmology.

Dr. Louis A. Buie, Rochester, Minn.—Proctology.

Dr. C. Frederic Fluhmann, San Francisco, Calif.—Gynecology.

Dr. Alan Brown, Toronto, Canada—Pediatrics.

Dr. William R. Cubbins, Chicago, Ill.—Orthopedics.

Dr. Francis G. Blake, New Haven, Conn.—Medicine.

Dr. John A. Kolmer, Philadelphia, Pa.—Medicine.

A Palace of Medical Science for the California-Pacific International Exposition at San Diego will display numerous educational phases of scientific medicine. There will be exhibits of various kinds by the Los Angeles City and County Health Department, Automobile Club of California, Chicago Roentgen Club, Southwestern California Pathologists Association, Southwestern Pediatric Society, California Dairy Council and City Health Officer of San Diego County.

The American College of Surgeons will furnish speakers on certain days during the Ex-

position. During the school vacation period motion pictures of special interest to children will be shown. The General X-ray Corporation has already installed an exhibit and other commercial displays of prominent pharmaceutical establishments and manufacturers of medical supplies will have exhibits.

May 26 has been designated as California Medical Association Day at the Exposition and it is expected that a large number of physicians and their families will visit the exposition that day. The Exposition opens February 12th and will continue until September 9. The California and San Diego Medical Societies will be in charge of the Palace of Science.

MEN AND MEDICINE: In another column we are doing the unusual for **SOUTHWESTERN MEDICINE** by reprinting an article in full from another magazine. The question of State Medicine is dealt with in such convincing language that we believe the readers of **SOUTHWESTERN MEDICINE** will appreciate the reprinting of it. Every physician should read this article.

The Maricopa County Medical Society in conjunction with the secretary of the **Arizona State Association** and the **Maricopa County Library Board** have employed **Mrs. Kitty Ives Coleman** to conduct the affairs of these three organizations. This will probably result in greater efficiency for organized medicine in Arizona.

The officers of three of our constituent organizations now are supplying material for their own departments in **SOUTHWESTERN MEDICINE**. The fourth is invited and urged to do likewise.

OBITUARY

Dr. R. E. Adams, formerly of Fort Sumner, New Mexico, died at Thermopolis, Wyoming December 24 following a short illness of pneumonia; interment was in Commanche, Texas. Dr. Adams is survived by his widow and two children. It is sad to relate that upon hearing of Dr. Adams' death his mother passed away; a double funeral was held on December 28th. After leaving Fort Sumner, Dr. Adams was physician to a C. C. C. Camp at Carlsbad and later to a camp at Thermopolis.

A sectional meeting of the American College of Surgeons comprising the states of Texas, Oklahoma, Arkansas, Louisiana, New Mexico, Arizona, and the Republic of Mexico will be held in Dallas, March 4, 5, and 6. The states of Alabama, Mississippi, Tennessee, Georgia, Florida, Cuba, and Puerto Rico are also invited to participate. Dr. John O. McReynolds of Dallas is in charge of the local arrangements committee.

NEWS ITEMS

Drs. Leslie Kober and Carlos C. Crag are members of the Child Welfare Unit in the Junior Chamber of Commerce of Phoenix.

Dr. Nelson D. Brayton of Miami is chairman of the Miami Good Roads Boosters which favors the completion of highways 80, 89 and 66.

Dr. M. I. Leff of Glendale, Ariz., addressed the Young Democrats' Club of Phoenix a month or so ago.

Dr. C. Lawrence von Pohle of Chandler, Ariz., Chairman of the Chandler Chamber of Commerce announced that the principals of discussion of the meeting will be the lighting system for the park, and the Chandler welcome sign; they will also make plans for Arbor Day.

Dr. John E. Bacon of Miami, President of the Gila County Chamber of Commerce, was the principal speaker in November at the meeting of the Globe Junior Chamber of Commerce.

Mrs. West, the wife of Dr. O. C. West, addressed the Ebell Club of Phoenix upon her own observations in India. Dr. and Mrs. West spent three years in China and India on an expedition. Mrs. West expounded upon the life of Gandhi.

The Phoenix Lions' Club had their annual banquet during January and Dr. A. J. McIntyre was the toastmaster.

Dr. K. A. Herbst and Dr. E. J. Higgins of McNary were in Phoenix during January on a visit.

Dr. and Mrs. Dudley Fournier have been entertaining as house guests Mrs. Fournier's sister and her husband from Kingman, Arizona, and another sister from London, Canada.

Dr. A. N. Crain announced that for the three months period ending December 23rd, in addition to much other work, his department had presented 203 health talks and issued many bulletins and pamphlets.

Dr. Harry B. Gudgel of Phoenix was recently elected director of the Salvation Army at the annual meeting.

Dr. Benjamin Herzberg, whom it will be remembered was seriously injured in an automobile accident last fall and has made a complete recovery, has been sued by the administratrix of the nurse's estate, who was holding the flash light while he was changing the tires, for ten thousand dollars and she attained judgment for 250 dollars.

Dr. J. D. Hamer has been chosen head of Maricopa County Red Cross.

Dr. Trevor G. Browne and Dr. George Thorngate have recently been elected as directors of the Maricopa County Red Cross.

Dr. M. G. Fronske of Flagstaff was recently awarded the Silver Beaver for distinguished service to boyhood by the Boy Scout movement in Arizona.

Mrs. E. Payne Palmer, the wife of Dr. E. Payne Palmer, is visiting their two sons Paul and E. Payne, Jr., where they are studying medicine at the University of Pennsylvania.

Dr. R. L. Penn was the guest speaker at the Community Club meeting at Litchfield, Arizona, during January.

Dr. R. W. Hussong, city health officer of Phoenix, addressed the Phoenix Chapter of the American Association of Engineers on the health problems of Phoenix.

Dr. and Mrs. O. E. Utzinger of Ray, Arizona, were visitors in Phoenix recently.

Dr. and Mrs. R. B. Durfee of B'sbee spent a short time in Phoenix during January.

Dr. and Mrs. P. L. Hyder of Date Creek, Ariz., were in Phoenix during January.

The St. Joseph Hospital of Albuquerque, New Mexico, is installing a new shock-proof 20 K. V. P. deep therapy General Electric X-ray unit.

The son of Dr. Travis Bennett of El Paso, who has been critically ill, is reported much improved.

Dr. Bloyce Britton of El Paso, who has been suffering with severe stomach trouble, went by ambulance plane to Kansas City, Missouri, to undergo treatment.

Dr. Morris P. Spearman of El Paso, Texas, addressed a lay audience on the subject of Prevention of Blindness.

Dr. A. M. Tuthill of Phoenix, Ariz., was chairman of the program committee of the President's ball. He has recently been named Adjutant General of the State of Arizona.

Dr. A. G. Hendrick of El Paso spoke on "Medical Care of Prisoners" before the Women's Auxiliary of the El Paso County Medical Association January 13 at the home of Mrs. R. B. Homan, Sr., at 1837 Grandview.

Dr. Bogel Jeffery of Gila Bend, Ariz., was recently appointed deputy county physician.

Dr. Max Porges of Czechoslovakia spent some time in Phoenix during January. He is an authority on rheumatism. He is very much pleased with the climate of the Southwest, and says this is an especially good place for rheumatics.

Dr. A. C. Armbruster and his son, Dr. A. Carl Armbruster of Phoenix, Arizona, have opened offices in the Security Building for the practice of medicine and surgery.

The wife of Dr. Harley Yandell of Phoenix, Arizona is recovering from a mastoid operation.

Dr. R. J. Stroud of Tempe, Arizona, has been mentioned as a possible candidate on the Republican ticket for Governor of Arizona. The doctor is taking his family to Europe to be gone several months.

Dr. Philip G. Corliss of Somerton, Arizona has opened a new and modern emergency hospital on the corner of Canal St. and Somerton Ave. in the Corliss Bldg.

Dr. and Mrs. J. S. Gonzales attended the Rosebowl Tournament in Pasadena over the New Year.

Dr. and Mrs. E. C. Houle spent the Christmas holidays visiting friends at Empalme, Sonora, Mexico. Dr. Houle was formerly chief surgeon of the Southern Pacific Railroad in Mexico, and was located in Empalme.



STATE MEDICAL ASSOCIATION

C. R. K. Swetnam, M. D., President

D. F. Harbridge, M. D., Secretary

ANNOUNCEMENTS

ARIZONA SECTION OF JOURNAL

With this issue of SOUTHWESTERN MEDICINE, the officers of the Arizona State Medical Association are editing a section of the Journal as reserved for the officers of the constituent associations. This is a new venture for the Arizona Association which we trust will be found both interesting and informative to all readers.

CENTRAL OFFICE. Due to an ever-increasing amount of clerical work, which the Secretary alone was no longer able to handle to his satisfaction, a lay-secretary has been temporarily employed by the Association and a central office opened to clear all business with speed and dispatch. If the venture is found to be an advantageous one, the office will be made a permanent one. The central office stands ready to assist the county societies in every way possible, as well as to aid the American Medical Association in distributing the findings of the parent-body more directly to members of the profession in Arizona.

HEALTH BULLETINS. For the benefit of lay organizations, such as Women's Clubs, Parent Teacher Associations, Public Nursing Centers, etc., the Arizona Association is now issuing monthly mimeographed Health Bulletins for state-wide distribution. The bulletins have been warmly received from the initial number and will be continued indefinitely.

BROADCASTING PROGRAM

Listen in over Station KTAR each Wednesday at 9:30 P. M. for a new weekly feature to be known as THE MEDICAL QUARTER HOUR. This series of programs will continue for three months under the sponsorship of three Phoenix pharmacies — Dorsey-Burke, Robertsons, and Waylands. Suggestions and criticisms from members of the profession regarding improvement in these programs will be sincerely welcome, as it is the wish of all concerned to make these broadcasts of inter-

est to the radio audience and to the profession as well.

THE DOCTOR

Today, more than ever before, the doctor is concerned with the two major medical problems—those that affect himself as an individual physician, and those that affect him in relationship to his public. These two general divisions of medical problems have always existed, but never before have they become such a matter of public concern as at the moment. Members of the profession are a little puzzled and, we might safely say, somewhat resentful, as to the reason for centralizing public scrutiny on the medical fraternity alone. The doctor, himself, would like to know whence all this and what it portends. Organized medicine is endeavoring in an open-minded, ethical manner, to learn what fault, if any, on the part of the profession has prompted such an intensive survey and scrutiny on the part of the political public.

Always in the past the solution of the doctor's individual problems has depended upon his own personality and upon his training. It would seem, from the present questioning of the profession, that the doctor's individual problems and responsibilities are not to remain his own. No longer are his costly training, his scientific office equipment, his charges for services apparently his own professional rights. The public would have something to say about these matters for him, it seems. Where has the doctor erred to focus the public "spot-light" upon his individual activities as a physician?

The medical profession, no less than others of special training and talent, has always had its problems of human relations—how best to serve the public with fairness and benefit to all concerned—how to advance the study and findings of scientific medicine in order that the bodily ills of humanity might better be met and conquered. There has been a steady, and gratifyingly rapid progress and advance on the part of scientific medicine. The beneficial re-

sults of such study and scientific research have been passed, unstintingly, on to the public. Where, in its human relationships, has the profession erred to give cause for challenging its rights so to serve suffering humanity?

Every individual physician, every constituent and component medical society, should avail himself and itself of every possible medium for meeting present challenges against the profession, and for reaching an ultimate intelligent appraisal of the situation with the ultimate good of society and the profession, and that good alone, in view. Study and thought, on the part of the profession, to the ever-increasing number of questions relating to the two major medical problems—the doctor himself, and his relationship to society—is the end to the means.

COUNTY MEDICAL SOCIETIES YAVAPAI COUNTY

Post Graduate Study Club. Dr. C. E. Yount, Secretary of Yavapai Society, announces that the Post Graduate Study Club, which was discontinued for a period, was re-inaugurated Tuesday, January 20, the re-organization meeting being held in Jerome. Dr. A. C. Carlson, head surgeon of the United Verde Copper Co., and his staff served as hosts at a well-appointed dinner preceding the scientific session. Members of the Society attending both the dinner and the Study Club were: Doctors E. A. Born, James H. Allen, Geo. O. Bassett, A. C. Carlson, John W. Flinn, M. S. Gaede, R. K. Hilton, H. T. Southworth, W. F. Hein, R. N. Looney, Joseph P. McNally, C. R. K. Swetnam, John T. Taylor, C. E. Yount, C. E. Yount, Jr., and Doctors Roberts and Gardina as guests.

A case for Group I, Jerome and Verde Valley, was presented by Drs. Carlson and Gaede in a most interesting and masterly way. Dr. Flinn read the Massachusetts General Hospital Staff discussion with pathological and post mortem findings.

The case for Group III, Prescott, was presented by Drs. McNally and Yount, with Dr. Bassett reading the Massachusetts General Hospital Staff discussion covering post mortem and pathological findings.

The meeting, successful from every standpoint, will be repeated in February.

New Member: The Yavapai County Medi-

cal Society reports Dr. W. F. Hein as a new member of the Society. Dr. Hein graduated from the University of Tennessee Medical College, receiving his Arizona state certificate to practice in August of 1935. Dr. Hein is located at Clemenceau devoting his practice to General and Industrial Medicine.

GILA COUNTY ELECTION OF OFFICERS

The Gila County Medical Society enjoyed a banquet at the Dominion Hotel in Globe on January 21, 1936. The occasion was the annual election of officers, after a successful year's work under the presidency of Dr. Clarence Gunter, the retiring president. An analysis of the attendance for the year on the part of the society's membership revealed a percentage of 77½. A general review of the year's work was presented by the secretary and discussed by the membership. Two members were added to the society roster for the year concluded: Dr. Charles B. Huestis, surgeon to the Ray Consolidated Mining Company at Hayden, Arizona, and Dr. J. B. Hancock of Fort Apache, Arizona, who is the U. S. Government's specialist on trachoma work for the United States Indian Bureau in western New Mexico and Arizona. The election of officers was as follows: President, Dr. Nelson D. Brayton, Miami; Vice-President, Dr. John Hagan of Inspiration; Secretary, Dr. Cyril M. Cron of Miami. Dr. Chester R. Swackhamer of Superior, Arizona, was elected Censor for the three-year term expiring December 31, 1938.

GILA COUNTY MEDICAL SOCIETY NEWS

Dr. I. E. Harris, formerly physician at the Phoenix Transient Camp, under the direction of the Maricopa County Welfare Board, is now associated with Dr. John E. Bacon on the staff of the Miami-Inspiration Hospital.

Dr. George LeBerge, formerly of Payson, has moved his offices to Peoria, Arizona. This leaves the attractive field of Payson without a physician.

The epidemic of influenza, which has afflicted Gila County, has been exceptionally severe with several deaths occurring from pneumonia.

Dr. William B. Watts, Jr., of the Miami-Inspiration Hospital Staff, who has been absent due to extended illness and recuperation at

San Francisco, has recovered and reported for duty at the hospital.

The Miami-Inspiration Hospital was reopened by Dr. John E. Bacon on January 1st, 1936, the institution now being open to the employees and families of the Miami and Inspiration Mines.

CARE OF THE INDIGENT IN GILA COUNTY, ARIZONA

An arrangement exists between the Gila County Medical Society and the Board of Supervisors whereby, in lieu of treatment to indigents in the Gila County Hospital, the physicians of the Staff are privileged to enter their private cases in this institution. This arrangement is unique among the hospitals of the nation and occurs in but three other such institutions. The County Hospital of San Luis Obispo, California, is a western hospital, having a similar agreement between its Medical Society and Board of Supervisors.

Membership on the Gila County Hospital Visiting Staff is determined by recommendation of the Staff to the Supervisors, the minimum requirement being that the applicant shall be a member in good standing of the Gila County Medical Society. This organization is, of necessity, separate and distinct from the County Medical Society.

The Visiting Staff of the Hospital held its annual meeting December 12, 1935, at which time Dr. R. D. Kennedy was elected Chief of Staff; Dr. Cyril M. Cron, Vice-president, and Dr. Nelson D. Brayton, secretary. The Staff holds monthly meetings at which all deaths occurring at the hospital are reviewed while outstanding cases are subjected to careful study.

Repairs to the Hospital are contemplated by the County Board of Supervisors who, together with Staff members, hope soon to have a new operating room with modern equipment both of which are sorely needed.

ANNUAL CONFERENCE OF STATE SECRETARIES

Reported by Dr. D. F. Harbridge.

CONFERENCE HELD AT CHICAGO

The annual conference of Secretaries of Constituent State Medical Associations, held recently at Chicago, proved to be one of the most helpful meetings ever conducted by the

organization. Component county societies will be interested in the subjects discussed at the conference and with any beneficial reaction which may, and should, ensue to all state memberships.

CONFERENCE THEME

Two major topics comprised the theme of the conference: 1. Over-organization of medical groups, and 2. Social Medicine. The Arizona secretary had the privilege of addressing the convention body on the topic, "The Need for Concerted Action on the Part of All Units of the Organized Profession." This paper in full will appear in *SOUTHWESTERN MEDICINE* at a later date when officially released by the American Medical Association through the pages of the *BULLETIN*.

OVER-ORGANIZATION OF MEDICAL GROUPS

Under the theme, "Over-organization of Medical Groups," it was brought out that there are at present too many organizations of specialty groups, apart from the societies, which tend to weaken the National, State and County associations. Morris Fishbein, editor of the *Journal of the American Medical Association*, emphasized this fact very forcibly in his paper, "A Survey of Medical Organizations." Dr. Fishbein stated that there is a recorded list of 13 specialty groups aside from the regular state and county societies, and that these groups have so diverted the attention of the profession from the true intent of organized medicine as to make the encroachments of social medicine more possible. Practically every paper given during the convention emphasized the point that no one doctor can, as many do, belong to a multiplicity of special medical groups without weakening the parent body—organized medicine. The consensus of opinion, as revealed by the several papers, was: That constituent State and component county medical societies should draw closer and closer together, and that they should gradually absorb the specialty groups and direct their activities, in order to fulfill the purposes of organized medicine in its human relationships.

INSURANCE CARE—ITS ACTUAL COST

One of the most interesting and enlightening points developed in the discussions coming under the general head of Social Medicine, was that pertaining to the cost of health insurance. Dr. J. G. Crownhart, Secretary of the State Medical Society of Wisconsin, presented

a thought-provoking fact in his paper, "A Basis for Future Developments of Medical Service," regarding the actual cost of medical care per person under an insurance plan. Dr. Crownhart presented figures from a nationally-known and recognized insurance company to show that the actual cost for giving medical care to one person, under any insurance plan, is \$27 annually, or better than \$2 monthly. Dr. Crownhart also demonstrated that medical groups endeavoring to care for patients under insurance plans of their own direction are getting, on the average, a maximum of \$1.50 per person monthly. These two facts, coupled together, would seem to foretell the ultimate failure of medical groups operating on a basis of less than \$2 monthly per person so insured. This exegesis, coming as it does, from a sound insurance company, should command the attention of all medical groups considering any medical insurance plan for the care of the low income group.

SUCCESSFUL PLAN FOR CARE OF INDIGENT SICK

A most unique and successful plan for the care of the indigent sick from the physician's standpoint was explained as existing in Washington, D. C. There the medical organization is given a place in the Community Chest budget, with funds set aside through that medium for giving the doctor a reasonable compensation in return for his care of the indigent. This is a thought that might be carried to successful action in communities of the Southwest.

SUBSIDIARY CONFERENCE THEMES

Medical Journals. A pertinent suggestion to editors of State Medical Journals was: that they follow a policy of presenting editorials in the first pages of the magazines where they would be accessible for immediate reading. The editorial policy of any publication is of paramount interest to its readers. To give editorials the preferential position of the first pages would be a pleasing innovation, stated E. M. Shanklin, Editor of the Journal of the Indiana State Medical Association, in his paper before the secretaries and State editors.

Drugs: A paper by Paul Nicholas Leech, Secretary of the Council on Pharmacy and Chemistry of the American Medical Association, developed points of direct interest to all

practicing physicians. It was urged that, instead of taking the word of the tradesman that certain drug products are of great purity, of high therapeutic value, etc., the physician himself should take time to consult with the Council on Pharmacy and Chemistry and receive from that body definite information as to some unknown drug before accepting the assertions regarding its merits by those whose main interest is merely its sale.

This is really too condensed a report of such an important assembly. In summary there is only space to state that each and every physician should read the A. M. A. Bulletin as it comes to his desk and give the papers presented at this conference his careful attention and thought. The profession is being challenged on its economic front to a threatening degree. A careful reading of all matter presented to the physician through the carefully prepared papers of all such annual conferences and meetings will give a clear insight into the situation and point the way to a fair solution of the problems confronting the profession as a whole.

Medical Annals of Arizona

(Continued from page 65)

own representations, was accepted also as a partner, or member of the 'Company' formed to engage in the ferry business. From the Lincoln letter, Uncle Abel had been operating the ferry but three months, and was greatly dissatisfied with conditions, and planning to 'sell at the first opportunity.' He also points out that 'this is an unsafe place to live in,' and my grandfather, Nathan Lincoln, always believed that his unease was from growing apprehension of the Glanton crowd, about whom he had become suspicious or had discovered the truth, as well as from danger of Indians, who had 'protested friendship, but proved themselves otherwise.'

"The nearest we can come to tracing the relationship between Abel Lincoln and Abraham Lincoln is this: Abel's grandfather was Joshua Lincoln, (married in Taunton, Mass., in 1783); our family tradition has it that Nathan had an 'Uncle John' Lincoln, who lived in Massachusetts, then Pennsylvania, and finally Virginia. My own father told me that his father (Na-

than) spoke of visits from 'Uncle John' from Virginia.

"A letter written by Abraham Lincoln in March, 1848, addressed to Solomon Lincoln, now owned by Dr. A. S. W. Rosenbach of New York City, states: 'My grandfather's name was Abraham, the same as my own. My grandfather went from Rockingham County in Virginia to Kentucky about the year 1782, and two years after was killed by the Indians. We have a vague tradition that my great-grandfather went from Pennsylvania to Virginia and that he was a Quaker.'

"The President's great-grandfather was probably not John, but one of his sons. My grandfather, Nathan, having been in the War of 1812, was of course one of the older generation.

"Hence the probability is that Abel Lincoln's grandfather (Joshua) and Abraham Lincoln's great-grandfather were brothers.

MAUDE LINCOLN LOCKWOOD."

January 7, 1936.

The wholesale killing of the Lincoln-Glanton party forced the government to order—on July 4, 1850—the establishment of a military post at that point. This order was carried out by Major S. P. Heintzelman in March, 1851, and the post was given the name of Fort Yuma.

Such, in brief, is the story of the beginning, the operation and the destruction of Dr. Lincoln's ferry—a pioneer enterprise whose tragic record is written in blood and fire. It is to be regretted that we know nothing more of his medical training and work.

*Encyclopedia Britannica, (14th ed.) Vol. 9, pp. 753-4; "Touring Topics," July 1928; Clark's History of Arizona.

(To be continued)

ARIZONA STATE MEETING

The entertainment features in connection with the 1936 meeting of the Arizona State Medical Association to be held in Nogales, April 23, 24, 25—for both men and ladies—will be quite different to that enjoyed in the past. Rest assured nothing is being left undone by the host-society which will add to your pleasure.

On Thursday and Friday afternoons, an innovation this year, will be the Social Hour. The hour from 5:00 to 6:00 p. m. each day, will be utilized purely for social purposes and it is hoped that all, men and women, will take advantage of

this pleasure. The place will be the lobby of Hotel Montezuma, and you just wait and see what we'll have waiting for you there. Be sure and bring your wife to the social hour, and rub elbows fraternally with the great group of doctors and their ladies who constitute the Arizona State Medical Association. Let's get acquainted. Let's know one another better. Let's have a good time.

You've heard about the cock-fight; well! we have fifteen ready to go. Bring your pocketbook along. The fight will take place at 5 p. m., on Thursday, April 23rd. And say, following the cock-fight, we'll go to the Club Royal, where we'll have dinner, and at 8:00 o'clock, the doors will be closed, the window shades will be lowered, and if you don't enjoy one of the finest evenings of real entertainment, then we'll miss our bet. This event is for MEN ONLY. Better bring along your colored glasses. Enuf sed.

While the men are enjoying the smoker, the ladies will be royally entertained elsewhere. Full details in the near future.

On Friday night, 7:00 o'clock, the annual banquet and dance will take place at the Cavern Cafe. Immediately following the banquet a drawing for a number of valuable prizes will take place. There will be prizes for both men and ladies. The committee has already obtained a \$20 medical bag; a \$29.50 Baumanometer blood pressure outfit; a mighty fine set of Bath-O-meter bathroom scales; a \$25 hand woven Mexican serape; a fine bottle of black narcissus perfume, and others too numerous to mention. Full details about these prizes in the near future. No one will be eligible to participate in the drawing for the prizes who is not present at the banquet.

On Saturday afternoon following adjournment of the annual meeting, a special excursion will leave Nogales for Guaymas (Old Mexico). We arrive there early Sunday morning, returning to Nogales Tuesday morning, having two full days at Guaymas to participate in the many pleasures to be offered there. Full details soon. Make ready to go. You'll never again be able to enjoy such low rates as will be offered on this occasion.

Program: Dr. J. D. Hamer, chairman of the program committee promises one of the best programs in the history of the Association. Then, too, there will be a special group program for the eye, ear, nose and throat specialists. This program has been completed and it is believed it will be appreciated and enjoyed by the profession. There is also the special group—Mexican physician's program. This ought to assure us of a splendid attendance of Mexican physicians from the Republic of Mexico. Then we must consider our splendid scientific and commercial exhibits; they are going to be mighty fine.

Make your plans now to come to Nogales, April 23 and rub elbows with your brother practitioners and participate in an honest-to-goodness meeting. We are doing our utmost down here in Santa Cruz to arrange everything for your edification and

enjoyment, and we wish you to come and be certain to bring along your lady. The meeting can never be complete without the ladies.

Keep an eye open for the March issue of Southwestern Medicine. We'll give you complete details at that time.

Scientific Exhibits

The Wyatt Clinic, Tucson, Arizona; The Arizona State Board of Health, Phoenix, Arizona; United States Public Health Service, Washington, D. C.; Drs. Soiland, Costolow and Meland, Los Angeles, Calif.; Drs. Bacon and Watts, Miami, Arizona; Dr. F. T. Hogeland, Cananea, Son., Mexico; American Society for the Control of Cancer, New York, N. Y.; American Medical Association, Chicago, Ill.; Metropolitan Life Insurance Co., New York, N. Y.; Drs. Nethercut and Allen, Chicago, Ill.; The Desert Sanatorium of Southern Arizona, Tucson, Arizona; Dr. Hans Barkan, San Francisco, Calif.; Dr. John O. McReynolds, Dallas, Texas; Dr. R. O. Schofield, Boulder City, Nevada; The Pathological Laboratory, Phoenix, Arizona; and a number of others tentatively promised. Full details in the March issue of Southwestern Medicine.

Commercial Exhibits

The Southwestern Surgical Supply Co., Phoenix, Arizona; A. S. Aloe Company, Los Angeles, Calif.; American Optical Co., Los Angeles, Calif.; Cutter Laboratories, Berkeley, Calif.; General Electric X-Ray Corporation, Los Angeles, Calif.; Stokely Brothers & Company, Oakland, Calif.; Kelly's Prescription Shop and Arizona Brace Shop, Tucson, Arizona; Philip Morris & Co., Ltd., New York, N. Y.; The Harrower Laboratory, Glendale, Calif.; Spicer & Company, Glendale, Calif.; Retail Druggists of Nogales, Nogales, Arizona, with several others tentatively promised. Full details in the March issue of Southwestern Medicine.

EL PASO COUNTY MEDICAL SOCIETY

The meeting of Dec. 23, 1935, was called to order by Dr. B. F. Stevens at 8: p. m. at Hotel Dieu Nurses' Home.

The minutes of the previous meeting were read and approved.

Dr. Rennick reported on the Central Medical and Dental Bureau the burden of which was to the effect that the Bureau should be given assistance before it becomes self sustaining.

Dr. Egbert suggested underwriting the Bureau up to \$200 per month for a period of six months. Dr. R. B. Homan thought this should be done. No action was taken.

Dr. Gorman spoke on the Southwestern Medical Association commenting on enlargement of membership and change in financing to permit the Association to subsidize a portion of the expense of the annual meeting which will result in lessened burden on the El Paso doctors. He also discussed the advisability of changing the type of programs.

Dr. W. R. Jamieson discussed the problem of civilian patronage at William Beaumont Hospital. Dr. Stevens appointed Dr. Jamieson to confer with the secretary as to steps to be taken.

Election of officers was held and the following were elected:

President, Dr. Stephen Schuster; Vice-President, Dr. George Turner; Secretary-Treasurer, Dr. L. O. Dutton; Librarian, Dr. McCamant; Board of Control, Dr. Leslie Smith; Board of Censors, Dr. Henry Safford, Jr.; Medical Economics Committee, Dr. B. F. Stevens and Dr. R. B. Homan, Jr.; As-

sociate Editor Southwestern Medicine, Dr. J. Mott Rawlings.

Delegates, Dr. Felix Miller; Dr. McCamant and Dr. Egbert tied for second place and agreed to decide between themselves as to which one would be the alternate. Dr. R. B. Homan received fourth place for alternate.

Adjourned at 9:30 p. m.

The Jan. 13, 1936 meeting was called to order by Dr. B. F. Stevens at 7:45 p. m. at the Hotel Dieu Nurses' Home. Dr. Stevens suggested that Dr. S. F. King and Dr. P. R. Outlaw be made honorary members of the society. This was unanimously voted. With brief remarks Dr. Stevens relinquished the chair to Dr. Stephen S. Schuster, the incoming president. Dr. Schuster briefly thanked the Society for the honor bestowed upon him and requested the cooperation of each member to make 1936 profitable for the Society.

The minutes of the previous meeting were read and approved.

Dr. Multhau read an interesting case report of congenital valves of the posterior urethra. The paper was discussed by Drs. Curtis, R. Thompson, B. F. Stevens and Multhau.

Dr. Rennick read a paper on infant feeding in the first trimester which was discussed by Drs. Stevens, Werley, Dutton, Gorman, Frank Schuster, Awe, Thompson and Rennick.

Dr. R. B. Homan, Jr., gave a brief case report and showed the x-ray films of a patient presenting a draining pulmonary sinus and invited suggestions as to treatment. Discussed by Drs. Ralph Homan, R. B. Homan, Sr., Egbert and J. Mott Rawlings.

Dr. Dutton briefly reviewed a case of multiple allergy in a child seven years of age which presented the symptoms of asthma, diarrhea, enuresis and a peculiar irritated lesion of the urethral meatus all of which were markedly benefited by diet.

Dr. J. Mott Rawlings briefly reviewed a case of asthma in an 11 year old child who presented symptoms of myocardial failure and who has been relieved by diet and house dust desensitization.

Dr. Ralph Homan read a resolution from the advisory board of the Central Medical and Dental Bureau:

To the El Paso County Medical Society in Regular Session on January 13, 1936: At the meeting of the executive committee of the El Paso County Medical Society the Advisory Board of the Central Medical-Dental Service of the El Paso Medical Society and the El Paso Dental Society and the Governing Board of the Central Medical-Dental Service the following was unanimously passed:

We (the Advisory Board) believe the Central Medical-Dental Service has made a definite contribution to the community and believe it should be continued and for that purpose we recommend to the El Paso County Medical Society the allocation of what funds may be necessary up to the sum of seven hundred and fifty dollars (\$750.00) for its continuance. Respectfully submitted.

Advisory Board.

Dr. J. Mott Rawlings moved its adoption and Dr. Leslie Smith seconded the motion. After general discussion the motion was passed with no dissenting vote.

Dr. Robert S. Hardwick was accepted for membership by transfer from the Omsted-Houston-Fillmore-Dodge Co., Medical Society, Minnesota.

The application of Dr. M. P. Spearman for

membership was given its first reading and referred to the Board of Censors.

The financial report of the Society for 1935 was briefly outlined and Dr. Schuster appointed Drs. B. P. Stevens and Gorman as an auditing committee.

Dr. J. Mott Rawlings asked for cooperation from the Society in securing material for Southwestern Medicine. Meeting was adjourned at 10:15 p. m.

L. O. DUTTON, M. D., Secretary.

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.

Directors New Mexico State Bureau
of Public Health.

Stokes on Syphilis: In a recent contribution Dr. John H. Stokes stimulates our flagging interest in the campaign against syphilis. Life insurance companies who substitute the "inexpressibly futile and silly question 'Have you had a venereal disease?'" for a blood examination should be punished by support of total disability claims arising as a result of such negligence. An effort should be made to secure the cooperation of the drug trade against counter prescribing. Women's clubs should hear of medical examinations as a protection for marriage and of extragenital chancres that have resulted from indiscriminate petting. The legislators should be harried by a lobbyist "who talks syphilis with the zeal and persuasiveness of an armament salesman."

Impressed by the royalties paid by ballyhoo in industry, Dr. Stokes has made an attempt to present in package form some of the important facts about syphilis. Here is one such package selected from a number that accompany his articles.

WHAT COULD WORK AND WHY IT DOESN'T What!

The Transmission of the Diseases Could Be All But Stopped.

WHY NOT?

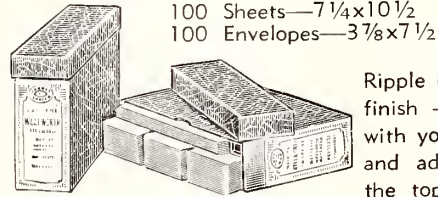
1. Nobody chases down the source of individual infections. Doctor too busy, patient was drunk, source is on the move, the State a slacker in epidemiologic work with this disease.
2. Doctor gives too little 914 or 606 (dose, number).
3. Patient jumps treatment (costs too much, hurts too bad, signs disappear), is told he has a negative blood, inconvenient hours, doesn't give a damn.
4. Doctor doesn't bother to find out about or treat syphilis before operations, childbirth, transfusions; infects himself, his nurses, his family, other patients.
5. Doctors won't quietly take Wassermanns on his pregnant patients. Thinks they're too good, or he'll lose the business, doesn't believe in treating prenatally anyway, because he doesn't read.

WHAT THEN?

1. State social service aiding an assigned epidemiologist to chase down sources and contacts.
2. Preach 30-0-60-2—thirty arsenicals, 0 rest periods, 60 bismuth, 2 years' heavy metal and observation.
3. Organize for cheaper treatment, no negative Wassermann reports given to patients first year,

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4. A blood test with every medical examination, before every operation, at 3rd and 7th months of every pregnancy, on every child at 10 days.

5. Talk to women about demanding blood tests and to doctors about taking them.

A Filtrable Tuberculosis Virus? Bacteria we know; more recently we have become acquainted with filter passing viruses. Are there or are there not creatures that are sometimes too big but at other time small enough to pass through a filter candle? Among the organisms increasingly suspected of possessing a filtrable stage in their life history is the tubercle bacillus. Two bacteriologists from the Westminster Hospital Medical School review the history of this suspicion and the results of their experiments. The invention of membrane filters has greatly aided research in this field. The writers show that infectious material passes more readily through .75 membrane than through .54 membrane but will occasionally pass through 0.3 membrane. Such virus also might be expected to pass through placentas. That congenital tuberculosis is not more common than it is must be attributed to the fact that only granular tubercle bacilli are found to have this filtrable stage. Perhaps the great majority of strains of tubercle bacilli never become granular and hence are never filtrable.

Wanted: Statistical Editors: In Tubercle is an article on cavitation which shows that left sided cavities appear to have better prognosis than the right. In another article it is claimed that patients with cavitation in the right lung have longer average duration of life than those with cavities on the left. One wonders whether if he were to toss a penny 100 times if he might not write a scientific article relating that heads turn up more frequently than tails (or vice versa). Until editors insist that writers of statistical articles make use of the probable error concept and demonstrate the statistical significance of their conclusions, the reader might just as well skip them.

1. Stokes, John H.: The Public, the Doctor and the Syphilis Problem, Jour. Soc. Hyg. 21:313 1935.

2. Fraenkel, E. M. and Pulvertaft, J. V.: Measurements of filtering-passing particles of the Tubercle Bacillus, Tubercle, 17:97, 1935.

MEDICINE AND MEN

A Discussion of Compulsory Sickness Insurance

FREDERIC E. SONDERN, M. D.
President Medical Society, State of N. Y.

(Reprinted from N. Y. State Jour. of Med., by permission of Debate Handbook. Italics are ours.)

In times of great economic stress and hardship, when we are called upon by the inexorable rotation

of events to pay for past excesses, it seems that the penalty is too cruel to bear, that it is inequitably exacted, that some easy way to escape it can be found. It is in such times that we look with sympathy and commiseration on the lot of the unfortunate and especially the sick who are unable to pay the cost of illness. Moved by commendable sympathy and zeal, certain sociologists and social workers are proposing such cure-alls as compulsory sickness insurance, advocated as a way to bring adequate medical care to all the people. It is my purpose here to discuss this scheme, which has incurred the almost universal condemnation of the medical profession, the very men who would be called upon to make it effective, and who judge it in the light of their experience with medicine and men.

I believe I speak for the medical profession when I say that we are moved deeply by the spectacle of people in need, and I may add, what later I shall refer to again, that we have continuously throughout the depression and even before, offered our services unstintingly in the alleviation of the miseries of those who are unable to pay for medical care, as well as those able to pay only part of its cost. This is a traditional, historic obligation. The medical profession of America has met this responsibility within the last five or six years in a creditable manner, to the point of severe individual financial sacrifice, thus accepting its share of the catastrophe which has descended upon all of us.

So well has this emergency been met under the prevailing system of practice that it can be said that there is little lack of medical care if the person needing it, or his family, will seek it. This may not be true in isolated sections of the country, or in sporadic instances, but in general it is true among the majority of our population. Physicians do not eject patients from their offices because they do not have cash in their hands, nor do clinics close their doors to them. If the patient cannot pay the doctor in full, he pays less; if he has nothing, he is treated without cost or is referred to institutions which care for indigent patients. *This is always the case if the patient seeks medical care; if he does not can it be forced on him to good purpose?*

But, it is claimed there is a lack of medical care generally in this country. It is made to look as if the medical profession, some way or other, is withholding from people the services it is their business to provide. This claim is based largely on the results of the periodic medical examination of school children and the medical examination of men drafted for war service, and on certain surveys of small population groups. These reveal without doubt large numbers of cases of poor health, defects which can be remedied, actual disease and medical neglect. Does this justify a belief that a system of compulsory sickness insurance would remedy the situation? It has not done so in any country where this system of medical practice is in operation.

Proponents of compulsory sickness insurance point to the fact that surveys have shown that almost half of the American people get no medical care whatever. But these surveys do not disclose what type of medical care these persons needed, nor whether they had sought it and why they failed to obtain it. So this fact proves nothing, except perhaps this: that almost half of the population are without medical care of a preventive rather than a curative type, doubtless because they are unaware of the value of preventive medicine, or are indifferent, or ignorant. We have no facts

whatever from such studies as these showing that any percentage of the population whatever, desirous of medical care, and seeking it, are not able to get what they need and want.

Therefore, the problem is not to bring to their door something which as yet they do not feel they need, offered as a part of a compulsory system of medical practice, but *the problem is to educate* these people to know that they should have periodic health examinations, that they should consult a physician early when symptoms of disease appear, that the old adage is still true: "prevention is better than cure." Many of the advocates of sickness insurance are recruited from the ranks of health educational workers in connection with official or voluntary agencies. It is recommended that they concentrate on these health education programs, which are as yet unfinished, redoubling their efforts to create the desire for good health, and disseminating the knowledge of how medical aid can improve it, using those gradual processes of education which have been attended by sound and encouraging improvement in the past. This is wiser than to attempt, by an all-inclusive scheme, to find a panacea for ills too various for a simple cure.

It is health education that teaches the individual and the parents of children to seek periodic health examination for hidden disease and medical help in case of illness. The availability of the doctor under any system is no safeguard against disease in people who disregard their health.

Before passing to the consideration of the proposed insurance law itself, let me say that *if the experience of the medical profession justified the opinion that the system would result in adequate medical care for all of the people, they would be the loudest advocates of the measure.* But medical men with few exceptions are opposed to the compulsory sickness insurance scheme. *They believe it will not in fact, bring adequate medical care to those whom it serves, but an inferior quality of care to that which is at the disposal of the wage earning group today.* Medical men believe the plan will result in a deterioration of the physician's standards of excellence, that it will foist upon society a bureaucratic system politically controlled, which will feed and fatten at the expense of the workman and interfere, to the great damage of the patient, with the relationship between him and his physician. These considerations strike at the very vitals of the profession. We are moved deeply by consequences which we envision in this country if compulsory sickness insurance becomes effective, and we find when we travel in Europe where this type of practice has been established, evils which could not be avoided, and perhaps would be aggravated, here.

Let us examine, in general, the provisions of the law as it has been offered for legislative enactment in this country, under the popular name of the "Epstein" law. We shall discuss the results which may be expected to ensue from the establishment of the system in the United States, presenting some of the substantiating evidence from abroad, and analyzing the superior advantages of individualized medical practice over collectivist efforts.

The Epstein law was proposed for enactment in a number of state legislatures during the sessions 1934-5, and was passed by none.

The principal features of the law are these:

Provision of medical care to all workers within a prescribed income class by "panel" doctors who are paid from an insurance fund.

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other such percentage contribution by the employer, and a third by the state.

Administration of the law is by boards, councils and committees on which doctors, dentists and labor interests are represented, but the balance of authority reposes in non-professional persons.

The administrative set-up for the individual state described in the bill should open the eyes of those who believe that compulsory health insurance would lower the costs of medical care. At the top is the Health Insurance Board, consisting of a ten-thousand-dollar-a-year Director and three other members, each of whom would receive an annual salary of seventy-five hundred dollars plus traveling costs and incidental outlays. A State General Advisory council of twelve and a State Medical Advisory Council of nine would also be set up, each headed by a full-time finance and a full-time medical supervisor. Districts would be subdivided into local areas, each with its own full-time finance and medical managers. Aiding the local offices would be local councils, the members thereof receiving per diem fees in addition to traveling expenses. These councils, in turn, would be assisted by an unlimited number of local advisory committees, also entitled to draw incidental costs. For this involved bureaucracy (and only a meager skeleton has been sketched), the worker would pay in periodic deductions from his pay, in lowered wages and augmented living costs and in increased taxation.

An independent investigation of the law was made by the Committee on Legislation of the New York County Lawyer's Association, which recommended disapproval of it in the following report:

"This bill seeks to establish a comprehensive state system of health insurance. Premiums are obtained by assessing every employer 3% of his payroll and the employee 1%. The benefits are of three kinds:

"1. Cash for those disabled in any manner whatsoever.

"2. Maternity benefits.

"3. Medical benefits.

"The administration is placed into the hands of three members appointed by the governor and two members of the Health Department. State advisory councils, district offices, local offices, local councils and local advisory committees are created, and the procedure for hearings and appeals are provided. The amount of \$100,000 is to be appropriated by the state to initiate the system, but the state is to bear no further expenses.

"The bill incorporates the British compulsory health insurance system. Its purpose is to provide adequate infirmity and disability protection to indigent employees. The estimated per capita medi-

cal cost in this country is somewhat over \$30.00, and it is believed that by this method the needy would be assured of sufficient medical attention and infirmity protection.

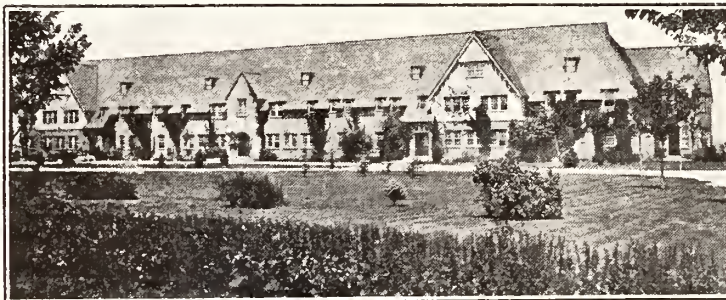
"We believe the bill is open to serious constitutional objections. Contributions are assessed against employers who by themselves or in the course of their business have no causal relation to the conditions upon which benefits are based. To require every employer to contribute towards the expenses of an expectant mother who happened to be an employee—or to require every employer to contribute to the maintenance of some employee who happened to be disabled through an accident entirely disassociated with his employment, would be violative of the fundamental concepts of the State and Federal Constitutions.

"Aside from the Constitutional aspects the bill is further objectionable. The principal of medical treatment "in gross lots" has never proved effective. Various systems allied to that of this bill have been in force for years in several European countries. The mortality tables there have revealed no improved medical conditions. The many annual administrative and other changes inaugurated from time to time in those countries reveal that the system is in a perpetual state of flux and is not beyond the highly experimental stage. To change radically our lifetime method of medical attention through personal choice and to eliminate the "family physician" for an experimental system would be highly unsatisfactory and unwise.

"The bill will inevitably lower the standing of the medical profession. The majority of the doctors will be compelled to submit themselves to the bureaucratic control of a State Department in order to earn a livelihood. As past experience has demonstrated, certain doctors would be favored in the amount of employment they would obtain and other doctors would be forced to different channels to support themselves. The zeal, the inspiration and the intellectual acumen of the medical profession so vital for scientific researches and experiments will be dampened considerably by the regimental control of doctors in the hands of a paternalistic State Department.

"Other objections need no elaboration. The severe assessment against employers would be economically demoralizing. The type of treatment and prerequisites necessary before such treatments are granted are not conducive to expeditions and effective medical attention. The bill further fails to place the control in the hands of the State Insurance Department where some degree of actuarial soundness of the system and efficient regulations therefor would be assured.

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"However effective and however meritorious a system of *voluntary* health insurance may be, a state wide compulsory system would be the worst form of governmental paternalism."

The medical profession approaches the consideration of such plans as these with a background of knowledge and experience in view of which we ask respectful consideration of our opinions. We are under a certain handicap in the premises, if we are to be required to submit our brief for the consideration of the general public, who have had no actual experience in giving medical care. Some of the most serious of our objections are based on intimate knowledge of our profession, which grow out of the unchangeable characteristics of human beings in the relationship of physician and patient. It is not easy to make these objections fully clear to laymen without such knowledge and experience. They are not so forceful when stated in print as they are when lived in life. Our friends who believe that compulsory insurance will bring adequate care to the people possess, on their side of the case, soothing gentle phrases of persuasion which simplify a matter which is really quite complex. As a stated problem on a piece of paper it may seem perfect; when it becomes an encountered problem in actual practice, the doctor who is to administer it, revolts. We look behind and beyond arguments such as this: That almost half the people of the country get no medical care whatever, that inasmuch as the average physician's income has been drastically reduced—therefore, "as is easy to see"—all we have to do is to bring medical care to these persons who are without it by compelling them to insure themselves, and they will be well and happy, and the doctor's economic problem will be solved. This may sound to a layman as a self-evident fact, and it is, the way it is put. It perfectly fits our hopes and aspirations. Now the physician is an idealist in his own way, just as the social worker is, but he is just a little more of a realist, because his profession insistently, day after day, calls upon him to examine conditions objectively in terms of how things are going to work. Not how they *might* work, please, if perfect conditions are presupposed, not how they *ought* to work, with human beings making the desirable response, but how they *will* work, actually, realistically, with human beings behaving as they do, and as they may be expected to do for some time to come.

(Continued in March Issue)

The doctor was examining the school children in a rural district.

One little boy was sadly underweight so the doctor asked, "Dont you drink any milk?"

"Nope."

"You live on a farm and don't drink any milk?"

"Nope; we ain't got hardly enough for the hogs."

It was a cold February morning and the sheriff had gone to the cell of Mose Jackson, who was to be hung the next day.

"For your last meal you can have anything you want, and as much of it as you want," said the sheriff. "What would you like, Mose?"

"Ah believe Ah'd lak a nice watermelon," replied Mose.

"But watermelon won't be ripe for six months yet," said the sheriff..

"Ah kin wait, boss; Ah kin wait," replied Mose eagerly.

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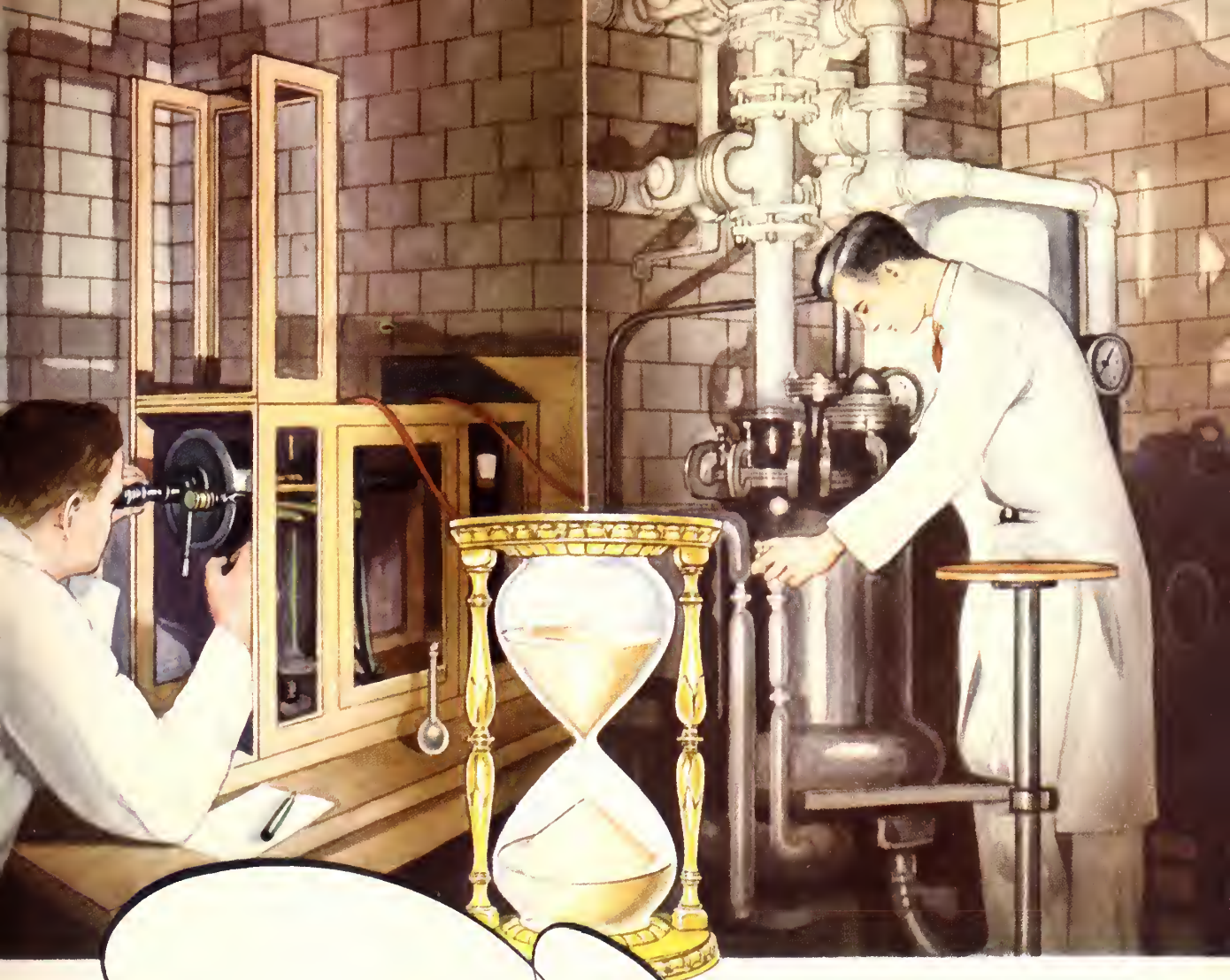
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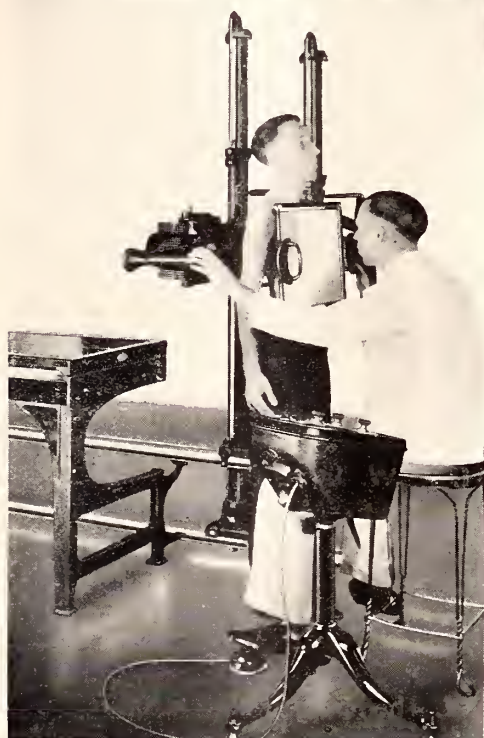
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The U. S. Pharmacopoeia (IX, 1916, and X, 1925) recognized cod liver oil as the oil from the livers of fishes of the family *Gadidae*. There being some 50 species in this family, in addition to the type species, *Gadus Morrhua*, our first studies were directed at the examination of the more important species classed as cod. It occurred to us that somewhere in nature there might exist a species, or a family, or an order of fish, the liver oil of which would make possible a mixture comparable with Oleum Morrhuae but higher in vitamin potency.

The study was then directed to other species. By 1927 we had quantitatively compared the antiricketic value of oils from 15 species of fish and 11 other oils and fats. This was the most extensive survey of vitamin D sources reported up to that time. Outstanding in this list was puffer fish liver oil with a vitamin potency 15 times that of cod liver oil. Puffer fish were not available in commercial amounts, but the fact that one species of fish yielded so high a vitamin store provided great stimulus to investigators.

We discovered that the potency of fish liver oils increases with the leanness of the livers. With this revelation, we began a survey of all available commercial fish, as well as of rarer species. Collectors were sent to distant continents and to the islands of the Pacific and Atlantic oceans. From ports which never before knew cold storage we arranged to obtain refrigerated livers for our experiments. This ichthyological survey was interrupted (1928) at the time we introduced activated ergosterol.

In 1929 the Norwegian investigator, Schmidt-Nielsen, reported halibut liver oil to be superior to cod in vitamin A. Upon investigating, we felt then, as we do now, that while halibut liver oil

marked a distinct advance it left much to be desired since it performed an expensive source of vitamin D. Hence it came to be used chiefly to supply vitamin A as a vehicle for viosterol.

Continuing the search for fish liver oils, by 1934 our laboratory staff had made thousands of bioassays of oils from more than 100 species to determine their vitamin characteristics. The results, reported in scientific journals in January and April 1935, were the culmination of a search literally of the seven seas.

With cumulative data on more than 100 species, it became evident that the fish belonging to the order known as *Percomorphi* differ from others in possessing, almost without exception, phenomenal concentrations of vitamins A and D. Thus we find liver oils which contain 50, 100, 500, and even 1,000 times as much vitamin A or vitamin D as average cod liver oil!

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*U.S.P. XI Minimum Standard.

**Principally *Xiphias gladius*, *Pneumatophorus diego*, *Thunnus thynnus*, *Stereolepis gigas*, and closely allied species.



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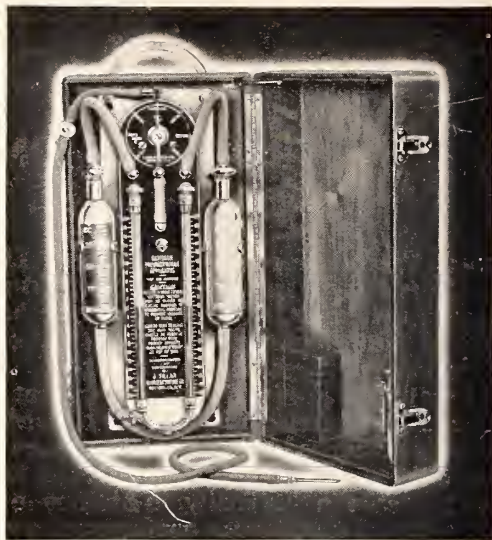
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CANNED FOODS AND THE PUBLIC HEALTH

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It is common knowledge that canned foods may acquire small amounts of these metals from contact with their containers. The acquisition of iron and tin salts in this manner is an electrochemical phenomenon (1); and the amounts of these metallic salts thus acquired will depend, among other factors, upon the character of the food. In general, the acid foods tend to take up more of these

metals; especially when air is admitted after the can is opened. However, the quantities of tin or iron present in canned foods, as a result of reaction with the container, are small; the analytical chemist reports these amounts in "parts per million".

As far as iron is concerned, it is commonly accepted that the amounts of this element—recognized as essential in human nutrition—which may be present in canned foods, are innocuous.

As to the tin salts which may be present in canned foods, the Department of Agriculture has authorized the following statement as the result of its own investigation:

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It may therefore be stated that the amounts of tin and iron salts normally present in commercially canned foods are without significance as far as possible hazard to consumer health is concerned.

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(1) Kohman and Sanborn, *Ind. Eng. Chem.*, 20, 76, 1373 (1928); *ibid.*, 22, 615 (1930).

(2) "Food-Borne Infections and Intoxications," F. W. Tanner, *Twin City Pub. Co.*, Champaign, Ill., 1935, p. 90.

This is the tenth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



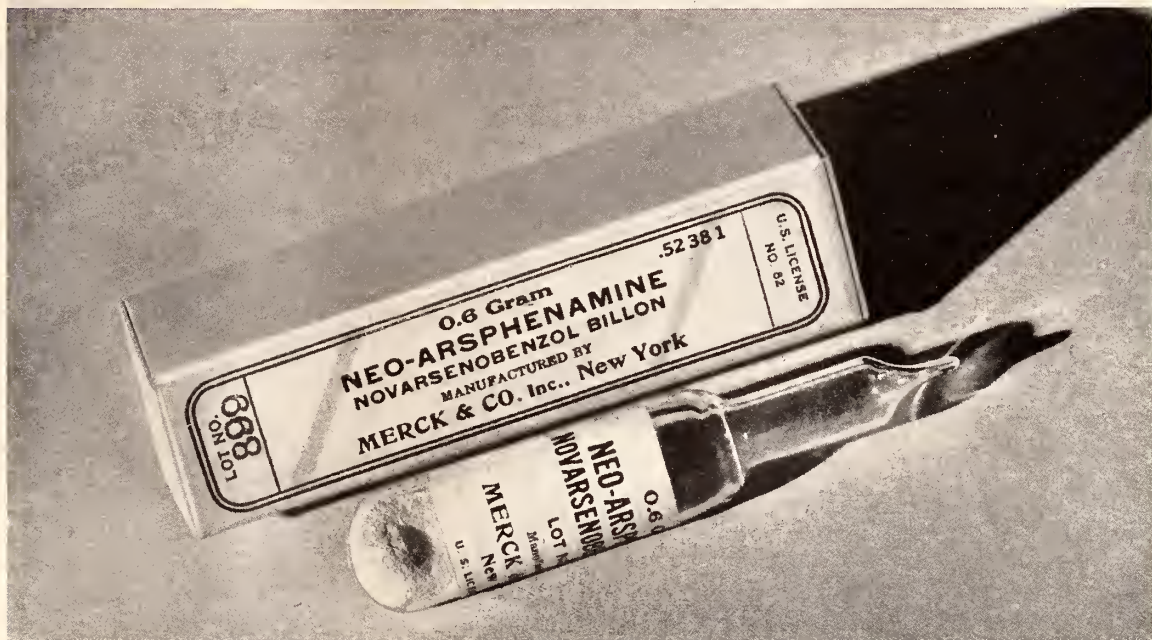
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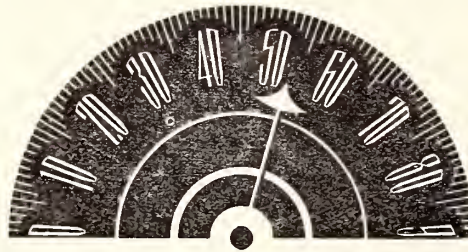
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VOL. XX.

MARCH, 1935

No. 3

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CONSERVATIVE SURGICAL PROCEDURES VERSUS RADI- CAL PARTIAL GASTREC- TOMY FOR PEPTIC ULCER.

VERNE C. HUNT, M. D.
Los Angeles, California

(Presented before the Southwestern Medical and
Surgical Association, El Paso, Texas, November
21-23, 1935.

A fundamental in the medical or surgical treatment of uncomplicated peptic ulcer has been control of gastric secretion and neutralization of gastric acidity. Other fundamentals in the treatment of the surgical peptic ulcer include excision of the lesion under certain circumstances when possible, adequate provision for relief of pre-existing gastric retention, and the avoidance of postoperative gastric stasis. No surgical procedure accomplishes each of these prerequisites to success in all cases. It is well known that failure to accomplish all of these essentials sets the stage, so to speak, for reactivation, recurrence and unsatisfactory results even though other factors may be concerned.

The term "peptic ulcer" may be entirely adequate from the point of view of the internist in relation to medical treatment but even to him, while the method of medical management may not be materially altered by the knowledge that the lesion is duodenal, gastric or postoperative recurrent, the location and nature of the lesion are of the utmost importance. His knowledge of the response of the various types of lesions to medical treatment, of the possible uncertainty of the true pathology of a gastric ulcer, and of complications that may ensue is essential to him in determining whether a given lesion shall be continued on medical treatment or whether surgical intervention is justi-

fiable. For the surgeon the broad term peptic ulcer must be broken down and the ulcer designated by its location, whether it is situated on the duodenal or the gastric side of the pylorus, and whether it is recurrent postoperatively in the duodenum, stomach or jejunum.

Duodenal Ulcer: Certain physiologic and pathologic factors concerned in the duodenum are responsible for surgical principles in the treatment of ulcer on the duodenal side of the pylorus which are at variance with those principles concerned in the treatment of gastric ulcer. Inasmuch as it comprises about 85 per cent of the primary ulcers of the duodenum and stomach, duodenal ulcer is the prominent lesion to which so much investigation has been directed.

Ulcer rarely, if ever, develops except in the presence of an acid medium; and curiously in the stomach in which acidity develops ulcer occurs infrequently, while it develops frequently in the duodenum, which has been accepted as having an alkaline content. That the gastric mucosa is infrequently eroded by the acid gastric content is undoubtedly due to a buffer capacity inherent within the gastric mucosa or the gastric secretion. The exact mechanism by which such buffer capacity is exercised is not known even though a number of theories have been advanced. The duodenum also possesses a buffer capacity preventing erosion of duodenal mucosa by acid, but to a lesser degree than that of the stomach. Likewise, the buffer capacity of the intestinal mucosa diminishes from the duodenum downward and the terminal ileum is least resistant to acid erosion of its mucosa.

The degree of alkalinity provided by the duodenal mucosa and its secretion, as well as the bile and the pancreatic secretion, is a variable one in the first portion of the duodenum, the constant site of the development of ulcer, below which ulcer rarely, if ever, develops. In other words, the maximum buffer capacity of

the duodenum in which the alkalinity of the duodenal content is most constantly maintained, is the second portion of the duodenum below the ampulla of Vater, the site of the outpouring of bile and pancreatic secretion even though these secretions are not highly alkaline. The mucosa of the first portion of the duodenum, the site of ulcer formation, is subjected to the onrush of the acidified gastric content of the stomach as it is ejected through the pylorus and is largely dependent upon its own mucosal secretion for the buffer capacity to inhibit its erosion. Some regurgitation of the duodenal content toward or through the pylorus unquestionably occurs. Recognition of the relatively low alkalinity of the duodenal content when considered in conjunction with the abundance of duodenal, bile and pancreatic secretions leads one to accept the recent conclusion of the physiologists that dilution of the acid in the gastric content is probably a more potent factor than neutralization in producing change in the chemical reaction of the gastric content as it occurs in the duodenum.

Surgical Procedures for Duodenal Ulcer: Re-activation of an ulcer, as well as recurrence or new ulceration, is with varying frequency following any one of the operations devised for duodenal ulcer. However, a knowledge of certain physiologic principles favors a more careful selection and execution of the operative procedure with a minimum incidence of unsatisfactory results. In general it may be stated that surgical methods to control gastric acidity through reduction of the amount of gastric secretion have not been highly successful. Even after a partial gastrectomy there have been returns, after several months, of gastric acidity to the preoperative level, largely through persistence of the various phases of gastric secretion, of which the cephalic or psychic phase has been important.

Gastro-enterostomy, as it has been applied to the chronic cicatricial, stenosing lesions of the duodenum, has been an eminently satisfactory procedure and has provided adequately for the relief of pyloric obstruction and the dilution and neutralization of gastric acidity. In its broader application to cases in which chronicity has been established over a period of years the operation has likewise been eminently successful and has been followed by results unsurpassed by any other operation devised for

duodenal ulcer. There has been a variable incidence of jejunal or anastomotic ulcer following gastro-enterostomy in from three to 20 per cent of cases. It is questionable whether the incidence of such postoperative sequelae is greater than five per cent when the operation is carefully executed in strictly suitable cases. By carefully executed, I refer to sufficient size and proper location of the stoma and jejunum, placed so that adequate drainage of the stomach is provided without angulation of the jejunum and subsequent gastric retention. By strictly suitable cases, I refer to those complicated by pyloric obstruction, those in which chronicity has been established and are resistant for one reason or another to continued medical management, and those in which surgical intervention is clearly indicated, and no other operation is as readily applicable. The operation is accompanied by a low mortality rate. In a review of 776 cases of duodenal ulcer in which I performed gastro-enterostomy there were 18 deaths, a mortality rate of 2.3 per cent. Utilization of the highest portion of the jejunum (the least vulnerable for subsequent jejunal ulcer by virtue of the maximum degree of alkalinity and protection of gastric acidity) and the pyloric third of the stomach in making the anastomosis, provides maximum assurance for dilution and neutralization of gastric acidity as well as adequate drainage of the stomach.

The relative frequency with which gastro-enterostomy has been followed by jejunal or marginal gastrojejunal ulcer has led to the development of a number of operations upon the ulcer and the pylorus. The direct operations have much to commend them when excision of the lesion is the chief purpose but the various adjunct procedures of division of the pylorus or excision of the major portion of the pyloric sphincter are executed on premises which do not seem strongly tenable. If one can accept the physiologists' observations that variations in the pH of the content of the pylorus and the beginning of the duodenum are on the acid side most of the time, it is readily conceived that little more than excision of the lesion, and perhaps enlargement of the gastric outlet, has been accomplished by the direct operation of excision and pyloroplasty by one method or another. The stage is set, so to speak, for a recurrence in the suture line or in the first

portion of the duodenum through a persistence of factors responsible for the original ulcer. Horsely has reported satisfactory results by excision and pyloroplasty in only four per cent of his cases.

It is well known that excision of a duodenal ulcer is not essential to its successful surgical treatment. Hemorrhage—intermittent small or massive—provides the only true indication for the excision of an ulcer of the duodenum, not necessarily to cure the ulcer, but to control the major symptom of bleeding. There is a tendency for duodenal ulcer to heal spontaneously if it can be deprived of the impact of the acidified gastric content. Except in the bleeding duodenal ulcers, surgical treatment of the lesions in the first portion of the duodenum are ideally served if it either eliminates the first portion of the duodenum with its inadequate buffer capacity to gastric acidity, or short-circuits the ulcer-bearing area. Wilkie's gastroduodenostomy accomplishes these purposes most admirably.

Inasmuch as partial gastrectomy does not adequately control gastric secretion, does not always permanently reduce gastric acidity below the preoperative level, necessitates gastrojejunal anastomosis in a rather long loop of jejunum in which the resistance to new ulcer formation rapidly diminishes, and thereby does not provide assurance against jejunal ulcer, there seems to be little to recommend the radical operation of partial gastrectomy as a procedure of choice as a primary operation in the surgical treatment of any duodenal ulcer. For the same reasons it seldom need be employed as the procedure of necessity. Furthermore, the mortality rate of partial gastrectomy as a primary operation for duodenal ulcer is several times as great as that of the conservative operative operations. I have resorted to partial gastrectomy in only 1.5 per cent of the cases of duodenal ulcer I have operated upon, and the operation in all instances was in bleeding ulcers on the posterior wall of the duodenum in patients in poor condition to withstand radical operation, with a resultant mortality rate of 15 per cent. During recent years, in cases of bleeding, calloused ulcers on the posterior walls, where excision has been desirable, and in instances where I formerly had done partial gastrectomies, I have employed the more conservative operation of excising the ulcer and

excluding the first portion of the duodenum by gastroduodenostomy or gastrojejunostomy without removing any portion of the stomach. This has been done as a lateral anastomosis between the pyloric portion of the stomach and the duodenum as far below the pylorus as possible, or as an end-to-side anastomosis between the divided and enlarged pylorus, and the highest accessible part of the jejunum. Such procedures are conservative, meet the fundamental prerequisites to success, may be executed within a legitimately low mortality rate, and the results are most gratifying.

Gastric Ulcer: The problems in the surgical treatment of gastric ulcer differ considerably from those in duodenal ulcer. Inasmuch as the frequent uncertainty regarding the true pathology of an ulcer or ulcerating gastric lesion invokes the fundamental principle of excision of the lesion whenever possible, the urgency for surgical treatment of gastric ulcer is greater than in cases of uncomplicated duodenal ulcer. The difficulties of differentiating clinically between a benign gastric ulcer and a carcinomatous ulcer are often great. Likewise, they are often great at the operating table, and frequently the distinction may be made only by the pathologist after careful study of sections. Not all gastric ulcers are amenable to excision by virtue either of subacute perforation onto neighboring structures and extensive inflammatory reaction, or their high situation in the stomach. In a review of 131 cases of gastric ulcer which I have operated upon 14 per cent of the lesions were situated in the relatively inaccessible cardiac third of the stomach either on the posterior wall or at the lesser curvature, in which instances excision was not readily instituted. By virtue of the high situation of the lesion and the protective perforation of large posterior lesions, excision was not resorted to in 20 per cent of the cases of gastric ulcer; instead, the indirect operation of gastro-enterostomy was employed. In the remainder of the cases excision of the ulcer was accomplished by the conservative operation of local excision and gastro-enterostomy in 71 per cent of the cases and by partial gastrectomy in 29 per cent.

The selection of the operation best suited to gastric ulcer is not materially influenced by the relative risk of the procedures, for in my experience the mortality rate of partial gastrectomy for gastric ulcer, much as I should

like to utilize it in favor of the more conservative operations, has not been in excess of that for the latter procedure but has actually been slightly less. The selection of the particular procedure is based largely upon the size of the lesion and its location. Those ulcers situated at the lesser curvature in the middle or pyloric third of the stomach and those immediately off the lesser curvature on the posterior wall, one cm. or less in diameter, are best suited to local cautery excision and posterior gastro-enterostomy is usually a necessary adjunct to local excision of the lesion because of not infrequent preoperative gastric retention or for obviating postoperative disturbance of gastric motility. Partial gastrectomy is usually the procedure of choice for gastric ulcers more than one cm. in diameter and for those lesions situated well on the posterior gastric wall. Restoration of gastro-intestinal continuity by posterior gastro-jejunal anastomosis after the method of Polya usually provides adequate drainage of the stomach and proper function. Segmental resection of the entire circumference of the ulcer-bearing part of the stomach, with restoration of gastric continuity by end-to-end anastomosis should be highly suitable for excision of an ulcer on the posterior wall. However, the frequent hour-glass deformity, with resultant disturbance in gastric motility, gastric stasis and poor function, have placed the operation in disfavor as a primary operation of choice.

Jejunal Ulcer: The problem of postoperative jejunal ulcer has not been great following the various surgical procedures for gastric ulcer. Even though they do occur subsequent to excision of a gastric ulcer and posterior gastro-enterostomy and even following partial gastrectomy, the incidence of jejunal or anastomotic ulcer is not so great relatively as it is following the various surgical procedures for duodenal ulcer. When a jejunal ulcer has developed subsequent to an operation for gastric or duodenal ulcer and medical management is ineffectual, or hemorrhage or perforation occurs, surgical intervention usually again becomes necessary. Whether radical partial gastrectomy should be done in all cases in which a jejunal ulcer has developed following a conservative operation for duodenal or gastric ulcer is a question open to debate. Unquestionably many factors are concerned in the selection of the operation most suitable and which

provides greatest assurance against subsequent recurrence. In certain instances the operation of subtotal gastrectomy has much to commend it as a secondary operation, particularly if a more conservative procedure is not readily applicable. In the presence of marked hyperacidity the radical operation may be properly instituted as the procedure least likely to be followed by recurrence. In selecting radical partial or subtotal gastrectomy as most suitable for jejunal ulcer one must be prepared to accept a greater risk and higher mortality rate than that attending more conservative operations. I have regarded secondary conservative operations with preference over partial gastrectomy and have employed the latter procedure in only 11 of 37 cases of jejunal or gastrojejunal ulcer which I have operated upon during recent years. To disconnect the gastro-enterostomy, excise the recurrent anastomotic or jejunal ulcer and close the stoma in the stomach and in the jejunum, with restoration of the preoperative gastro-intestinal continuity, was all that seemed necessary in eight cases through inability to demonstrate previously existing duodenal ulcers. In these cases it seemed reasonable to assume that ulcers did not exist at the time of the original operations. Disconnecting the gastro-enterostomy, excising the jejunal or marginal ulcer, closing the gastric and jejunal stoma, with pyloroplasty or gastroduodenostomy, was the procedure in the remaining cases.

The surgical procedures for the cure of duodenal and gastric ulcer, in properly selected cases with due regard for their suitability give entirely satisfactory results in the majority of cases. It is that minority, in which postoperative recurrence mars the result, which emphasizes the necessity of adhering strictly to surgical and physiologic principles. It is furthermore worthy of emphasis, though not proved, that there is much evidence to support the idea that foci of infection are concerned in the causation of ulcer. Wilkie believes that no treatment is of lasting benefit until all foci of infection are eliminated. There is much to suggest also that postoperative control and regulation of the habits of life aside from regulation of the diet minimize materially the likelihood of a recurrent ulcer.

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AVOIDANCE OF COMPLICATIONS OF PROSTATIC RESECTION

H. C. BUMPUS, M. D.
Pasadena, Calif.

(Read before the Southwestern Medical Association, El Paso, Nov. 21-23, 1935.)

Although prostatic resection has diminished by several weeks the postoperative hospitalization, postoperative complications unfortunately are not entirely prevented. In fact, it has added some which are incidental to its ultra specialized technique. The methods found most efficient in avoiding the new hazards as well as the older complications will be considered.

Transurethral resection has proved such an advance over the older methods of treatment that it is deeply to be regretted if avoidable complications bring condemnation upon the procedure. Cabot reports from the Mayo Clinic that the mortality in the last 600 consecutive suprapubic prostatectomies was 9.5 per cent while in 600 resections, the majority of which I did, it was 1.3 per cent. A frank discussion of all possible hazards of this new method should be available.

Many of the complications following resection are attributable to errors in the preparation of the patient. In addition to the routine physical examination, blood tests, etc., roentgenograms of the urinary tract should exclude calculi of the kidneys, bladder, and prostate. In the prostate stones are usually near the periphery and have small sinus tracts to the urethra. Such tracts must be explored and the stones evacuated. To do this it is frequently necessary to incise through the internal sphincter with a Colling's knife and cut away the adjacent walls. When this is done the urine washes out the infected pocket, and it heals from the bottom instead of acting as a receptacle for urine and a focus for infection. Unless such diverticulae are removed, resection will prove a failure as far as relief of symptoms is concerned.

In addition to shortening the postoperative course resection has also greatly diminished the time of preoperative preparation. It has long been my belief that preliminary drainage of the bladder could improve the patient's condition only if there was marked renal impairment secondary to obstruction or considerable urinary infection. In the absence of these two conditions it does not seem logical that preoperative drainage can be of service. In fact, drainage may increase surgical risk by causing infection. Any indwelling urethral catheter is prone to set up infection and aggravate any that exists. Instead of operating in what was, comparatively speaking, a clean field one is forced to work on tissue recently and acutely inflamed. Prolonged convalescence, infection of the kidneys, thrombosis of the vessels of the pelvic plexus and possibly septic emboli may result; therefore, when possible, resection should be done without previous drainage by urethral catheter.

If impairment of renal function is great, or urinary infection pronounced, transurethral surgery may be contra-indicated and suprapubic cystotomy indicated. This will permit renal function to improve and inflammation of the bladder and prostatic urethra to subside. It need not, however, be made the major procedure of exposing the entire dome of the bladder, the space of Retzius opened and the perivesical tissue traumatized. If the bladder is distended with germicidal solution, the dome of the bladder is readily located through a midline incision and an opening made just to admit a catheter. Soiling and exposing of large areas are thus avoided. With such technique the patient is out of bed in a day and often can leave the hospital the third morning to return when the renal function and infection have improved sufficiently for surgery.

With suprapubic drain the possibility of bleeding following resection is considerably reduced, as the patient does not need to void through his urethra until healing is complete. However, it tends to prolong convalescence, for the patient never feels he has completely recovered until the suprapubic sinus has healed.

A cystogram prior to surgery may demonstrate diverticula that do not empty; may demonstrate deformity of the bladder, and not infrequently the first clue of a nerve lesion

which, rather than prostatic hypertrophy, may be the cause of the symptoms.

Diverticula usually shrink following removal of urinary obstruction, which demonstrates how important it is to know of prostatic obstruction in patients with inguinal hernia. To repair such hernias without relieving the urinary obstruction incurs disappointing results.

It is prior to operation that prophylaxis against infection can best be instituted. Clark, Helmholtz, and others have demonstrated that the most frequent cause of urinary infection is the colon bacillus. It has great difficulty in living in a urine of increased acidity. Giving ammonium chloride or other acidifying agents so that the pH of the urine is kept at 0.5 or below is an important step in preventing infection.

The most distressing postoperative complication is incontinence. Prostatic resection is done with instruments of extreme precision in an area with boundaries, varying considerably in individual cases but always decidedly limited. To remove the smallest amount of tissue beyond those boundaries endangers not alone the functional results of the procedure but jeopardizes the life of the patient. The proximal boundary of the field of operation is the veru montanum surrounded by the external sphincter. To excise tissue beyond this is to risk incontinence, and to excise the veru is to lose landmark of the safety zone.

The loop resectoscope, with which excision of tissue is performed by drawing the loop toward the operator, enhances this possibility. In the hands of the experienced the danger is easily avoided; in the hands of the novice it is of too frequent an occurrence and accounts for most of the cases of incontinence caused by the operation. Such an expert resectionist as T. M. Davis, when working close to the external sphincter, never draws the loop toward it but rather risks the possibility of excising too deeply by thrusting the loop toward the bladder. This procedure, it seems needless to add, can only be successfully accomplished by the most skilled. With my knife punch this accident is unlikely. I have never experienced it. All cutting is in one direction and the extent of a cut is limited by the size of the fenestrum. Although not the chief of my knife's advantages, it is certainly one worth considering.

The possibility of operating on a patient with

an early cord bladder must ever be kept in mind. A certain degree of hypertrophy may be interpreted as the sole cause of the urinary retention when in truth it is only responsible for obstruction—not retention which is due to changes in the cord. With routine Wassermanns such pitfalls will be few; the careful urologist also will make cystometrograms. Muschat has shown that these need not be made with elaborate and intricate apparatus. If the number of c.c. of fluid that is required to produce the first desire to void is charted, it will be found that any amount, below 150 c.c. is indicative of hypertonicity and, over 250 c.c. of hypotonicity. The character of the tonus curve he feels is important, as in normal individuals the bladder pressure gradually rises until severe pain is noted. If this rise does not occur, hypotonicity must be suspected. The maximal voluntary pressure is also valuable, for like the capacity it varies within narrow limits seldom being below 40 mm. or over 60 mm. Muschat states that the part the abdominal muscle plays in this function has been overestimated and that a person with a tabetic bladder and normal muscles cannot raise the maximal voluntary pressure. He feels that when any two of the factors referred to are abnormal a neurological lesion exists.

In closing the discussion of this distressing complication of resection, it is fair to repeat that incontinence is invariably due to the lack of skill of the operator, and is not a reflection upon the operation.

The operation of transurethral resection may be profitably compared to litholapaxy, an accepted surgical procedure for over a half a century. Yet stones are removed from the bladder by suprapubic cystotomy in many cases not because cystotomy is safer, for its mortality rate is high, but because few surgeons have had training in the use of the lithotrite and prefer to use a technique with which they are familiar. When transurethral resection has reached the dignified age of lithotripsy I believe it will be done only by those with adequate training, and when that utopian day arrives the complication of postoperative incontinence will not occur.

Stricture of the Urethra: In transurethral resection the urethra must receive careful consideration. When this is neglected stricture, the second most distressing postoperative com-

plication, will inevitably occur. A stricture of the anterior or pedunculous portion of the urethra can never be cured and passage of sounds is a lifelong necessity. To insert a resectoscope by force is inexcusable! The surgeon may have the satisfaction of completing his operation but the obstruction is bound to recur to plague him and his patient. If a small instrument is not available then dilation of the urethra over weeks may be carried out; it is far preferable to do a prostatectomy than to unduly traumatize the urethra by transurethral instrumentation.

While the passage of too large instruments leads to stricture leaving them in too long is a more frequent cause. Since the instrument is manipulated by grasping the overlying penis, prolonged manipulation may produce an extensive peri-urethritis. Also if the loop method is used the frequent heating of the loop tends to heat the shaft of the instrument and to dry the surrounding lubricant, thus traumatizing the mucosa. The instrument that does not slide readily back and forth should be withdrawn and re-lubricated.

Those with extensive experience assert that it is preferable to operate in multiple stages than have a long operation. A third cause of stricture is the use of too large a catheter following resection. A 22 French or less will usually allow urethral exudate and secretions to flow out along its side thus preventing peri-urethritis and possible abscess.

Meatotomy makes insertion of the instrument easier and insures better drainage of the urethral secretions. In few surgical procedures is conscientious constant attention to detail so important and its neglect so disastrous as in transurethral surgery.

Urinary Extravasation: Many deaths have occurred because the operator did not confine himself to the boundaries above referred to. If only prostatic tissue is resected urinary extravasation can not result, but if the bladder base or the prostatic capsule is perforated extravasation of urine with all its distressing results is liable to occur.

Sepsis, hemorrhage, and uremia long associated with post-prostatectomy may result but usually are less severe and more easily controlled after resection. Residual urine and postoperative dysuria are probably more fre-

quent following resection with a loop electrode than following prostatectomy.

Sepsis: Pyelonephritis can usually be attributed to either of two causes: Interference with the outflow of urine or the introduction of a new strain of bacteria. Interference with drainage may occur from a multitude of causes all of which are preventable but many of which may be neglected. The first neglect may occur with the adjustment of the indwelling urethral catheter at the completion of the operation. If the resection has been properly done there will be no necessity of inserting the catheter by means of a stilette; it should slide in easily with the end just within the resected portion of the bladder neck. If the catheter is of soft rubber with multiple eyes as it should be, it will drain the bladder and the recently excised area. If it is of American manufacture, it will probably be of the consistency of tire rubber, manufactured to get the "mileage requirements" of the most hard boiled hospital superintendent and instead of having multiple eyes with an open end will have a closed end with possibly two small eyes which will open into a lumen smaller perhaps than the thickness of a catheter wall. It is certain to contact the posterior wall of the bladder to the great discomfort of the patient, and its stiffness and inelasticity will be a source of irritation to the already traumatized urethra. In addition to being soft, an indwelling catheter should be small enough to permit outflow of urethral exudate along its outer surface. When the catheter is properly adjusted it should be possible to freely inject several ounces of fluid into the bladder and to get it back with the same ease. Until this can be done the patient should not leave the operating room. Once this is accomplished adequate and uninterrupted drainage may be expected but its maintenance is not certain. The catheter may become occluded by clots or by kinks or pressure from the patient's rolling on it. Except the failure to remove sufficient tissue, nothing is so important for convalescence as adequate care of the drainage apparatus immediately following surgery. One is often told by a nurse that the tube became obstructed but was later adjusted satisfactorily; the next day's rise in temperature records the event by an acute attack of pyelonephritis.

The urethral catheter is to insure adequate

drainage of the bladder during recovery from the anesthesia and while clots are forming, after the urine has cleared nothing is gained by leaving it in provided the obstructing portion of the gland has been excised. I remove the catheters usually at the end of 48 hours, and often sooner.

To allow a catheter to drain directly into a urinal may contaminate the urinary tract by the introduction of new strains of bacteria. To attach it to a long tube and allow it to drain into a bottle at the bedside is preferable; but unless the tubing and bottle are sterilized, difficulty will be experienced in preventing secondary infection; in irrigating the bladder, the connection between the catheter and the tubing must be broken and one or the other will inevitably fall on the bedding, often where rectal contamination has occurred; the new organisms are then washed into the urinary tract made fertile for their propagation by the blood and serum from the operation.

I attach the urethral catheter to a closed system immediately upon the patient's return to his room. There are two types: In one the tank leads to a simply "Y" tube, one outlet of which goes to the bladder and the other to a sterile receptacle. The tube to the tank is closed except during irrigation. It is opened to adequately lavage the bladder and to insure an uninterrupted outlet to the sterile receptacle. The second system is more complicated in that there is a constant dripping of solution which fills the bladder at intervals; emptying the bladder is by siphonage. This apparatus calls for more attention. Either method keeps postoperative sepsis at a minimum, and if excessive bleeding results, insures adequate and constant drainage without the danger of introducing new strains of bacteria.

Organisms introduced into the bladder by operation or by irrigation produce immediate acute urinary sepsis and may remain in the urinary tract for weeks and even years. I cannot emphasize too strongly the necessity for the most rigid aseptic technique postoperatively if convalescence is to be short and uneventful. The nurse that tucks the drainage tube under the mattress while she empties the urine bottle, or clamps off or disconnects the catheter while she bathes the patient, may be responsible when she again connects the system for the introduction of bacteria that may defy

the highest priced urinary germicides or the most rigid of ketogenic diets.

It hardly seems necessary to assert that the irrigating solution should be sterile; as gallons are generally required during the operation; sterilization of it may be a problem. If the operator will take cultures of irrigation fluids he may be surprised at the bacteriological reports and able to explain stormy convalescences that follow perfect operative technique.

Epididymitis: The incidence of epididymitis with resection is not as great as with prostatectomy. Some surgeons feel that it is not justifiable to ligate the vas deferens to prevent that which will affect but 10 to 15 per cent of cases. Ligation of the vas deferens requires but a few minutes and subjects the patient to no danger. Usually he is beyond the age when offspring are expected, so it seems advisable to insure him against a painful complication.

The technique I use is as follows: The vas deferens is forced to the anterior scrotal wall with the index finger grasped between two towel clips; it is cut down upon and a double ligature passed beneath it with a curved needle. The needle being cut off, the two halves of the ligature are pulled in opposite directions one from the other until approximately one centimeter of the vas deferens is exposed. The ligatures are tied and the intervening portion of the vas deferens resected. This is always sent to the laboratory for microscopic check-up as thrombosed vessels have been ligated. The wound is closed with a single suture and dressed with collodion.

Hemorrhage: Hemorrhage was the main factor which delayed the acceptance of transurethral resection. It occurs fortunately in less than five per cent of cases; usually obstruction from clots is far more serious than the loss of blood.

Prevention of hemorrhage is best insured by adequate operation and freedom from infection. If sufficient tissue is not removed the remaining traumatized gland does not readily heal and its sloughing surface may bleed. The tunneling of a hypertrophied prostate to construct a new outlet is to be condemned. As much of the obstruction as possible must be removed. This is accomplished when an uninterrupted conical passage is made from the trigone to the veru montanum. To do this may require the removal of both lateral lobes as

well as the median. Anterior hypertrophy must not be overlooked, for the vascular supply of this portion is excessive, and if traumatized and congested will readily bleed.

A frequent cause of late bleeding is excessive coagulation to control bleeding. I injected the vessels of several hypertrophied prostates obtained by autopsy with solution opaque to the Roentgen ray. Immediately below the urethral mucosa in the region of the prostatic capsule the blood vessels are in the form of a plexus, but in the hypertrophied portion the vessels run parallel and are much fewer in number. If the operator resects sufficient tissue to get into this intermediate area he will have comparatively little bleeding and will not be forced to do excessive coagulation which is required if he merely cuts a short distance through the urethral mucosa or goes too far out into the prostatic capsule. With my instrument coagulation is for control of bleeding and not for excision of tissue hence less coagulated tissue is left to be later absorbed or to slough away and cause bleeding. Incised tissue heals far more rapidly than does coagulated tissue.

Burning and painful urinations seem to be in direct ratio to the amount of coagulation done. These symptoms in my experience have appeared more often with loop resection than with tubular knife removal. For this reason I believe the proper choice of instruments is the most important single factor in avoiding post-operative complications.

A SIMPLE DESCRIPTION OF SILICOSIS AND ITS COMPLICATIONS

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Silicosis supposedly is produced by silica or silicates. Silica is silicon dioxide or anhydrous silicic acid. Silica constitutes about 60 per cent of the earth's crust, forming whole mountain ranges. Silicates—salts of silicic acid—are the essential substances of clay, mica, feldspar and slate.

Jones has considerable evidence that hydrated silicate of aluminum and potassium known as sericite or secondary white mica (a

fibrous mineral) hastens development of silicosis if not the main cause of it.

It is said to be difficult to find fibers of sericite in silicotic lung with an ordinary microscope and that it is much better to use a petrological microscope.

A third cause of silicosis seems to be carbon dioxide. Milky quartz contains per c.c. 200,000 to 1,000,000 cavities filled with liquid carbon dioxide and other substances. The critical temperature of carbon dioxide is 31°C., and milky quartz breathed into the lungs soon rises to 7° C.; the carbon dioxide then becomes gaseous with a pressure of 84 atmospheres—over 1,000 pounds per square inch. Silica dissolves in the alkaline fluids of the body and when the quartz walls dissolve sufficiently the cavities burst. The carbon dioxide expands almost instantly to about 400 times its former volume, therefore the traumatism produced by the explosion of the quartz cells may have a considerable part in producing silicosis, along with the ordinary effects of free silica or silicates.

Every person accumulates silica or silicates in his lungs during an ordinary life. This is one of the causes of fibrosis in almost every person from middle age on. The average person who lives 70 years has generally as much silica as his body can handle and remain in good health. Therefore, were the length of life suddenly extended from 70 to 200 years, every person would have silicosis.

Most observers consider the harmful silica particles to be about the size of tubercle bacilli; therefore, the dust seen by the unaided eye is not harmful. A tunnel cleared of dust is not safe for human occupation for a considerable time, because the dangerous dust particles still remain.

Preventive measures are only partially effective because the fine particles, like smoke or vapor, cannot be washed away by sprays of water; they merely recoil from the moisture.

The amount of silica or silicates to produce silicosis varies in different persons because some men have more resistance to it than have others. The number of silica particles of pathologic size per c.c. permitted in South Africa, where the formation is 85 per cent free silica, is 300, and is dependent upon the rock formation. The average of those devel-

oping first stage silicosis, American classification, in the average mine, develops it in about 10 years. Only a percentage of men employed have silicosis, regardless of the exposure. First stage silicosis may result by five years exposure, but many men have only first stage silicosis after 25 to 40 years exposure.

Distribution of Silica or Silicates Through Lung Tissue: Particles of silica of less than 10 microns are carried from the air cells along the lymph channels with the current until fibrosis and the accumulation of dead phagocytes obstruct the channels. Then the live phagocytes go against the lymph current and are forced out of the lymph channels into the interstitial tissues. This produces a thorough distribution of silica to all parts of the lungs. Silica dissolves in the alkaline fluids of the body and the silica sol and not the sharp particles of silica produce the lung pathology.

Uncomplicated First Stage Silicosis, American Classification, of the Peribronchial, Perivascular, Lymph Node Type: The clinical symptoms in this stage are indefinite. The patient may have colds more frequently than usual and at times an unproductive cough. The pulse, temperature and blood pressure are normal. The stethoscope is of practically no value and there is no disability. The radiograph shows an increase in size and at times density of the hila. There is sometimes an increase in the trunk shadows and always a symmetrical increase in the linear markings, extending to the periphery of the lungs, generally more marked in the mid sections. In some cases there is a haziness in the mid sections resembling the radiographic appearance of female breasts. First stage silicosis may progress rapidly or slowly and while there is no definite time for it to pass into the nodular or second stage, usually a number of years are required.

Uncomplicated Second Stage, American Classification, Nodular Type: There may be shortness of breath on exertion and dry cough; vomiting may occur; colds are more frequent than usual and there may be decrease of chest expansion. Working capacity is reduced in some cases but the majority have good color and appear in the best of health. The temperature, pulse and blood pressure are usually normal. The stethoscope may show diminished sounds but the inspiratory murmur may

be changed from normal vesicular to high pitched or harshened murmur and inspiration is shortened. The expiratory murmur is decreased and prolonged. Hemoptysis occasionally occurs. The radiograph as a rule shows less prominence in the hilum shadow than that of the first stage, with nodules symmetrically distributed over both lungs, generally more marked in the mid sections. The nodules range in size from a pinhead to a small pea and are clear cut. Adhesions to the diaphragm and heart may exist, with possibly considerable retraction of the heart. Dilatation of the right ventricle of the heart occurs occasionally.

Uncomplicated Third or Terminal Stage, American Classification, Diffuse Fibrosis: Shortness of breath, dry or productive cough, and often loss of weight occur. The pulse is usually accelerated on exertion. There may be fever, especially toward the end of the third stage. Hemoptysis occasionally occurs. There is sometimes loss of appetite and diarrhea and toward the end of the third stage the patient may appear very ill. Chest expansion is progressively decreased and disability increased. There is little change in blood pressure unless changes have occurred in the heart or aorta. Respiratory sounds may be greatly diminished or one may hear any kind of sound over portions of the chest. When the respiratory sounds are clearly heard they are similar to those described in the second stage.

The radiograph shows the nodules coalescing at the beginning of the third stage, usually first in the upper mid sections of the lungs, which later result in diffuse fibrosis over fully two-thirds or more of both lungs and like everything else in silicosis, is symmetrical; occasionally over considerable portions of both lungs are small areas of fibrosis with haze in between. There is a third type of fibrosis—designated massive—resembling consolidation, of both lungs.

Some claim low grade tuberculosis exists though perhaps not demonstrable. Firm adhesions to the diaphragm, heart and at times aorta may retract heart and aorta. I have observed at post mortem adhesions not shown by the radiograph. This would perhaps prevent collapse therapy in tuberculosis, although this treatment would likely be unwise because of reduced lung capacity.

The first, second and third stages of uncom-

plicated silicosis occur usually as described or are the predominating types. Occasionally we have what is called the interstitial type, which involves the interstitial tissues and the first and second stages are absent. Great exaggeration of chest markings alone or associated with hilum involvement are found and at about the time of the second stage there is an increase in the chest markings without nodules; hence in typical interstitial fibrosis an increase in the chest markings or an interstitial fibrosis passes directly into the third or terminal stage. Mixtures of the different types occur. The interstitial type is usually more disabling and progresses faster than do other types.

Complications of Silicosis: The investigators in the Picher field of Oklahoma, Kansas and Missouri stress the organisms of Vincent's angina as a complication of silicosis. I have rarely found these organisms in the sputum. The complications of silicosis are:

Pneumonia, lung abscesses, bronchiectasis, tuberculosis, fungi and gangrene.

The important elements in the sputa have been:

Leucocytes, endothelial cells from the alveoli, pneumococci, catarrhalis micrococi, Pfeiffer bacilli, streptococci, staphylococci, tubercle bacilli and fungi.

By taking specimens from the upper part of the throat and posterior nares, I ascertained that sputum from the lungs picked up organisms from the throat membranes.

Chest irritation from sinusitis, fungi involvement or early silicosis are difficult to differentiate in a radiograph and any two or all exist together. Silicosis and tuberculosis may co-exist, with silicosis predominating at one time and tuberculosis at another. If one is not careful he may give a diagnosis of a prominent silicosis with incipient tuberculosis and in the same man two years later give a diagnosis of unimportant silicosis and marked tuberculosis. This mistake can be obviated by serial pictures.

Disability in Silicosis: There is less disability in uncomplicated silicosis than is generally thought; for instance, a man may have second stage silicosis at 40 and still work at 50 with little disability. I have had only 10 years experience with silicosis, hence do not know from personal experience what happens over

a longer period. Complicated silicosis of even the second stage rapidly increases the disability. The second stage in hard rock miners usually lasts about three years. I have taken men with second stage silicosis, complicated with sinusitis, infected tonsils, fungi infection, etc., and had sinuses drained, tonsils removed and fungi eliminated and have them show less disability than before, though still working in dust.

Silicosis and tuberculosis are more rapidly disabling than is tuberculosis alone. Tuberculosis associated with silicosis usually appears much later in life than does uncomplicated tuberculosis. We expect tuberculosis before 40. With silicosis it usually occurs after 40 and is fairly frequent in men of 50 to 60, occasionally with no evidence of its previous existence. This is doubtless due to an activation of latent tuberculosis. There is a slightly greater incidence of pneumonia in the early stages of silicosis than in normal persons but it acts like ordinary pneumonia. The incidence of tuberculosis increases with the stages of the silicosis.

RELATIONSHIP OF PSYCHIATRY TO THE GENERAL PRACTICE OF MEDICINE

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(Presented before the Pima County Medical Society.)

The purpose of this paper is to clarify the various ways psychiatric problems confront the general practitioner and the specialist. Psychiatric problems are not limited to obvious emotional and mental difficulties. Many patients suffer from psychogenic disturbances manifested in the form of physical symptoms.

I shall not burden you with a complicated discussion of the psychologic mechanisms of the neuroses, or a detailed exposition of modern methods of treatment. Psychiatric problems may be divided into three large groups. This classification is a rough one. The groups overlap; frequently it is impossible to distinguish between them. The first large group has obvious nervous and mental disturbances. The second has somatic complaints purely psychogenic in origin; at least no organic basis can be discovered. The third group has somatic

complaints and organic changes which apparently account for them, yet nevertheless are psychogenic in origin.

In patients with symptoms obviously psychogenic, are varying grades of mental and emotional disturbances all the way from so-called simple nervousness to severe psychoses. Into this group fall the mildly depressed and unhappy people with maladjustment difficulties—perhaps marital problems. In the severe type are encountered the more obvious psychoneuroses compulsive acts and obsessive mental reactions—incomprehensible at first glance. The compulsive acts appear from an uncontrollable fear; for example, one washes continuously to overcome infection. Obsessive thinking is characterized by thoughts, frequently horrible, recurring despite all effort to keep them out of consciousness. One woman for instance suffers from the obsessive fear that she is going to kill her children.

In this group is the phobic individual, suffering from an intense fear out of proportion to its cause; the patient frequently recognizes the cause as absurd and yet it is entirely out of control of his reasoning. Here also we find the so-called anxiety states characterized by anxious expectation and excessive worry. These patients actually seek situations upon which to express anxiety caused by factors of which they are totally unaware.

Somewhere between the psychoneurotic and the psychotic is the psychopathic individual, whose anti-social behavior stamps him as abnormal although he manifests no symptoms in the usual sense of the term. Many alcoholics and drug addicts belong in this class. Finally, as we step over the intangible line between neurosis and psychosis, are the disturbances of feeling, acting and thinking which is insanity. Here are the schizophrenic (the splitting of personality) with his peculiar absence or distortion of emotional feeling, incoherent speech patterns, delusions, and hallucinations, and the manic depressive with fluctuating moods of excessive elation and psychomotor overactivity to profound depression and psychomotor retardation. Here is the parietic with his intellectual deterioration and delusions of grandeur.

Despite the ease of recognizing this group as psychogenic in origin, satisfactory treatment is not always possible. The treatment of the

psychoses excepting cases of paresis is still woefully inadequate. Hospitalization is our only recourse at the present time for most psychotics are inaccessible to ordinary psychotherapeutic procedures during the acute phases of their illness. The benefit from institutionalization is frequently temporary and superficial.

The medical profession as a whole has not recognized that drug addiction and chronic alcoholism are psychiatric problems in persons needing thorough psychiatric reeducation—difficult to apply, time consuming, and not always successful. As a result these patients are treated as moral outcasts and are punished by an outraged society; they may be incarcerated in the futile hope that the underlying psychogenic factors may be cured by removing the drug or counteracting its effects.

Perhaps because the medical profession has recognized its own inadequacy in the treatment of the psychoneuroses, it has an attitude almost of censure. Physicians have thought all too frequently that the patients could rid themselves of their symptoms, if they would only try; as a result the neurotics frequently go from physician to physician, ending up victims of pseudo-scientific cults preying upon unfortunates.

Beginning to permeate the medical profession is the fact that unhappiness, so-called nervousness, and mild states of depression, frequently resulting from maladjustments in marital problems, are psychogenic in origin. They are medical problems in that they result in mental symptoms; therefore, they belong to psychiatry.

It is the second group with psychological difficulties expressed in somatic complaints with which medical practitioners encounter the greatest problems. Hysteria and all its manifestations is no new disease; it has been recognized since the days of Hippocrates. Only recently, however, have we learned to understand the extremely complicated mechanism whereby psychological difficulties are converted into physical complaints. It is because of this interesting conversion from mental to physical that hysteria is called conversion hysteria. Time does not permit giving the reasons for one patient's expressing his difficulties in emotional form whereas another converts his problems into physical symptoms. A certain

degree of what has been termed somatic compliance is necessary before conversion symptoms occur; it may be that the somatic compliance is necessary before conversion symptoms occur; and it may be that the somatic compliance is related to the inherited physiological make-up of the individual.

Hysteria is a protean disease that simulates almost any organic condition, because of which the general practitioner as well as the specialist have to be continuously on guard. To confuse organic disease with hysteria is dangerous—frequently leading to dire consequences; hysterical coma and cerebral hemorrhage have been confused; hysterical paralyses have been diagnosed and treated as organic; the convulsions of a hysteric frequently simulate Jacksonian epilepsy so that diagnosis may be extremely difficult.

No man practicing medicine, regardless of his particular field, can completely dismiss the problem of the hysteric. The eye specialist knows how to differentiate hysterical from organic blindness and is well acquainted with the hysterical contracture of visual fields. The nose and throat man reckons with hysterical aphonia and neurotic vertigo, and must be constantly on guard not to be inveigled into operating unnecessarily upon the large group of hysterics who focus their complaints upon nose, throat, and sinus conditions. The gastroenterologist frequently has to exert his diagnostic ability in differentiating between organic and hysterical conditions. Globus hystericus and cardiospasm are hysterical phenomena from which carcinoma and diverticula require careful differentiation. So-called nervous indigestion can be confused with gastric ulcer and malignancy. Anorexia, vomiting, pain, diarrhea, and constipation may be symptoms of appendicitis, intestinal obstruction, gallbladder disease or any of the numerous organic ailments of the gastro-intestinal tract; but the careful diagnostician is ever alert to the possibility, however, that they may be hysterical phenomena.

The gynecologist should be constantly on the lookout for hysterical conditions. The women who insist upon repeated gynecological treatments despite no demonstrable pathology are frequent visitors. Pelvic pain, backache, dysmenorrhea, and ammenorrhea are all conditions which may be psychogenic in origin

and differentiation from organic conditions is always necessary. Frigidity and sexual anesthesia are almost always based upon psychosexual problems and is relatively rarely from organic conditions.

The genito-urinary specialist also realizes how essential it is to differentiate between organic and psychic conditions. Eneuresis is almost always a psycho-neurotic symptom and although symptomatic cure is occasionally affected by various therapeutic agents the underlying condition is usually undisturbed. We have all seen bedwetting continuing late into childhood almost miraculously cured by removal of adenoidal tissue. The cure was not directly from the removal of lymphoid tissue from the naso-pharynx, but in the psychological reactions associated therewith. The emotional factor stops eneuresis, but unfortunately it is frequently replaced by more insidious if less apparent disturbances. Impotence in the male is a more frequent symptom than we have been led to believe, but less frequently organic than the text books teach.

Incipient pulmonary tuberculosis is frequently confused with the hypochondriacal symptoms of the neurasthenic, and the so-called anxious heart gives a clinical picture difficult to differentiate from organic heart disease. The frequent absence of any pathological organic findings in angina pectoris makes it particularly difficult to rule out the pseudo-anginoid attacks of the neurotic.

The surgeon has learned to his cost that the symptoms of the hysteric can simulate organic disease so closely that differentiation may frequently be impossible. Chronic appendicitis and adhesions, to mention but two common conditions, are diagnoses which all too frequently represent the almost incomprehensible desire of these patients to be operated upon.

Unfortunately merely labeling a patient hysteric solves no problems. The picture is still further complicated by the fact that many hysterics do not wish to be cured despite their protestations to the contrary. Their symptoms have definite psychologic value to them and to a certain extent represent distorted fulfillment of desires which they cannot admit to themselves. As a result they are frequently unwilling to subject themselves to the merciless investigation which psychiatric treatment

necessitates although such is the only possible means of cure.

The third large class has unquestioned organic disease or the end stage of long-continued psychic trauma. This may seem far fetched; yet to quote Alfred Stengel, "The psychogenic nature of symptoms, functional disorders, or even of organic diseases was not unrecognized by sound clinicians of the past even as far back as Sydenham." Many clinicians of unquestioned repute emphasize the psychogenic factor in such diseases as mucus colitis, gastric ulcer, hyperthyroidism, asthma, and so-called allergic states.

If we consider the mechanisms involved this so-called jump from the psychic to the organic loses much of its mystery. A close relationship exists between emotional states and the autonomic nervous system. The ability of emotion to influence gastric secretion and motility has been carefully studied by many investigators, and Cannon in his book, "Bodily Changes in Pain, Hunger, Fear, and Rage," gives many examples of this indubitable fact. Fear and anger exert a profound influence upon general body metabolism.

Operating through the ductless glands, secretions are poured into the blood stream and then, through the sympathetic and parasympathetic nervous system, the organs are caused to respond. This explains how anorexia, nausea, vomiting, or diarrhea may be the result of emotion. Emotional states are not always conscious and a persistent unconscious emotional reaction may, through long continued disturbance of physiology, eventually lead to permanent organic tissue change.

Consider mucus colitis. Julius Friedenwald says: "Three views as to the nature of this condition have been maintained: (1) That it is purely neurogenic and that the mucus produced is entirely a nervous hypersecretion, a conclusion recently again emphasized by Bockus, Bank and Wilkinson; (2) that it is catarrhal in nature produced as a result of inflammation of the mucus membrane of the colon; and (3) that it is in part neurogenic and in part inflammatory." He concludes: "From a study of our cases together with a rather careful review of the extensive literature of this subject, we feel justified in drawing the conclusion, that mucus colitis is purely of neurogenic origin and that the discharged mucus

can be considered entirely in the light of a nervous hypersecretion. This stage may continue with exacerbations and remissions—recovery may occur or in some instances due to a lowered resistance of the bowel, infection may take place with the production of inflammatory changes of a more or less intense type which may eventuate in the production of an ulcerative colitis." In discussing treatment he says: "A careful analysis into the patient's emotional and mental state must be undertaken. Unless he realizes that his disability is purely functional and remediable largely through his own efforts but slight relief can be expected."

Frank Bodman in an article significantly entitled "The Psychological Background of Colitis" says: "One of the ideas I do want to put forward is that ulcerative colitis may be the end result or organic consequence of functional disorder of the colon." Again, "We must bear constantly in mind that the patient cannot be separated from her colon, or the emotional state from the somatic symptom. I believe that colitis is often the somatic expression of the emotional conflict between reality and phantasy." Bodman cites cases which have been investigated psychologically and which bear out his contention that colitis is frequently at the onset of symptoms a psychogenic problem.

The idea that psychic factors may play a significant part in the etiology of peptic ulcer is new and not widely recognized. Rivers says "Von Bergmann and many other observers considered that derangement of the nervous system was the most significant single factor in the causation of peptic ulcer. Some derangement of the function of the sympathetic and parasympathetic nervous system is considered by advocates of this hypothesis to result eventually in localized spasmophilia of the duodenal or gastric musculature with consequent areas of mucosal or submucosal ischemia. In consequence, there is a diminished resistance in the localized areas which results eventually in erosion of the mucosa. The prolonged continuation of this nervous irritability tends to the production of chronic ulcer." Cushing was of the opinion that irritative disturbance of either fiber tracts or vagal centers in the brain stem were responsible for ulcer in certain cases.

Draper and Tourette write: "The gastric disturbances in cases of peptic ulcer in man, as well as the other signs of sympathetic nervous system weakness, e.g. sweating, fatigue, and wide palpebral fissures, forms a picture highly reminiscent of the sympathectomized animal. It would seem that these peptic ulcer people possess an inadequate sympathetic nervous system. This inadequacy may be the result of an inherited weakness or of a wearing out process. The latter might well follow prolonged exposure to the chronic anxiety state just referred to." Preceding this discussion Draper had recognized the existence of two sources of fear—one conscious and acute, the other subconscious and chronic. They continue: "In other words there seems to be two separate and independent sources of fear. One of these is subconscious and unrecognized by the patient. The anxiety that arises from this level has been at work over a long period. The other consciously perceived, is formed by the menacing episode that threatens life, limb or ego. The former more chronic element of this double fear attack has engaged our interest especially of late, because it appears to be almost part of the constitution itself. . . It would seem that the peptic ulcer race was composed of persons of definite constitutional type. These people possess qualities of soma and psyche which can be easily recognized. When the healthy balance of the man-environment unit is disturbed, symptoms in the domain of the sympathetic nervous system and gastrointestinal tract develop. The man-environment unit disturbance can often be corrected permanently by the use of appropriate psycho-therapeutic methods. Analytic psychology at the present seems to offer the best attitude of approach."

With hyperthyroidism we again find that we are dealing with sympathetic nervous system imbalance and there is considerable evidence that this imbalance is frequently psychogenic in origin.

Eli Moschokowitz says: "Graves syndrome is not merely a combination of signs and symptoms. The study of this disease has convinced me that there is a common denominator namely the personality I have already described which has been termed *formes frustes*, base-dowoid and autonomic imbalance. There is no doubt in my mind that this personality is not

the result of the disease as some aver. In terms of modern usage the personality may be termed part of the constitution of the disorder, although how far this personality is the result of environment or of anatomic factors still requires extensive study. . . One must conclude therefore that despite the fact that many of the signs of Graves disease are apparently the effects of hyperthyroidism, the gland itself is not the primary cause, and the changes that occur in the gland are the resultant factors. As the constant constitutional basis and the common excitant, fear, are of psychologic origin, these changes are probably the result of influence in the nervous system. It is probable that the autonomic nervous system is responsible for a considerable part of the clinical expression of the disease."

Draper in the paper quoted refers to Crile's paper on recurrent hyperthyroidism and recurrent peptic ulcer. Crile pointed out the similarity of evidence of vegetative nervous system disturbance found both in patients with exophthalmic goitre and in those with peptic ulcer. Among these patients were, for example, widening of the palpebral fissure, fatigue, decrease of body tissue and body fluid pH, sweating palms and the subjective feelings of nervousness."

Every case of hyperthyroidism is not a purely psychogenic problem and should be treated as such. This is a plea for your consideration of hyperthyroidism as a syndrome developing in a certain type of emotionally unstable personality wherein the psychologic factors, although unconscious, may be of primary importance.

Asthma and its associated allergic conditions of hayfever, urticaria and food sensitizations are all part of a general picture of vaso-motor sensitivity. Tremendous strides have been made in an understanding of the condition known as allergy. The consensus of opinion today is that the allergic individual is sensitized to a foreign element—food, dust, pollen or bacterial antigen. This hypersensitization is vaso-motor in origin and therefore closely related to the functioning of the autonomic nervous system.

Every case of allergy is not a psychiatric problem. In many cases allergic conditions rest upon vaso-motor imbalance, in turn the result of a physico-chemical sensitivity which

has nothing to do with psychic factors. On the other hand recognizing the close relationship between the vaso-motor autonomic system and the psyche, prepared one for allergy on a purely psychologic basis. This explains why many allergic states prove resistant to all forms of physiologic therapy. Where the autonomic imbalance which leads to hypersensitivity, is psychogenic in origin thoroughgoing cure fundamentally must be psychiatric.

Conclusion: There are three groups of psychiatric problems which confront general practitioner and specialist. The first has obvious nervous and mental symptoms. The second presents varying and bizarre somatic complaints without demonstrable organic pathology. The primary etiological factor in these two is psychogenic. The last group presents unquestioned organic pathology which may result from antecedent psychogenic trauma. Therapy in the first two groups must be psychiatric in nature. In the third group those cases of organic pathology resulting from psychogenic causes can be completely cured only by proper treatment of the psychic factors.

1. Alfred Stengel, "Internist as his own Psychiatrist," Montreal meeting of A. C. P. Feb. 9, 1933.

2. Julius Friedenwald, "Mucus Colitis," *Ann. Int. Med.* Dec. 29.

3. Frank Bodman, "Psychological Background of Colitis," *A.J.M.S.* Oct. '35.

4. Rivers, "Clinical Consideration of Etiology of Peptic Ulcer," *Archives Internal Med.* Jan. 1934.

5. Draper and Tourette, "Man-Environment Unit and Peptic Ulcer," *Arch. Int. Med.* April 1932.

6. Eli Moschokowitz, "Nature of Graves Disease," *Arch. Int. Med.* Oct. 1930.

INFANT FEEDING IN THE FIRST TRIMESTER

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(Presented before the El Paso County Medical Society.)

I discuss feeding during the first three months of life, because in this period purely feeding difficulties most often arise, and the doctor is called for help. If an infant is fed properly during this period he has little afterward that can be directly laid to his diet; upsets of the gastro-intestinal tract in later months are then most often part of the gen-

eral picture caused by acute upper respiratory infections or by contagious diseases.

Despite the circulars and magazines which state that other foods are just as good as breast milk, mother's milk is the only proper food for babies. Four-fifths of the deaths during infancy are those artificially fed; breast-fed babies are not nearly so susceptible to diseases of the respiratory tract as are the artificially fed. Practically all babies should and can receive breast milk during the first three months, if there is the knowledge and desire on the part of the mothers.

It has been said that not more than 40 to 60 per cent of the mothers in the United States can nurse their babies. Others say and I agree that 90 per cent of the babies can be nursed, at least three months. I had charge of a maternity home in which the girls were required to stay from three to six months after delivery. We had a rule that all mothers must nurse their babies on the four hour schedule; there was much opposition; we had the advantage of a disciplinary institution and the mothers were young; every mother of the 50, physically able to nurse babies, produced at least a few ounces of breast milk a day; this usually increased. Although some of the infants received complementary feeding, the breast milk once established usually persisted for three to four months. These results, of course cannot be applied to private practice.

I believe, however, that in private practice, if care is given when the baby receives his first bottle, early weaning can be avoided. What usually happens is: The mother finds on weekly weighing, that the baby has not gained as her baby book said it should; the doctor gives a formula to be used once or twice a day as needed; and the next time he sees the baby, two to three weeks later, it has been weaned. The patient should be seen daily when the bottle is first given and the mother told of the importance of nursing her baby. Frequently bottles are needed.

The average mother with her first baby, although she will not say so, feels that it is unfair and unnecessary for her to be tied down 24 hours a day for six months to nurse the baby. Discuss this with her the day after delivery and inform her that absolute confinement is not necessary. A bottle may be substituted for the night feeding, if her rest is disturbed too

much and after the second month occasionally for the two P. M. feedings; she then has an entire afternoon now and then for other activities and also has a well nourished breast fed baby. A mother who has had experience with both nursing and artificial feeding, does not need to be told which is the more satisfactory.

Many feeding troubles are to be avoided from the first day. The average baby loses more ounces than is necessary the first 10 days—due to insufficient fluid during the establishment of breast secretion.

Over a period of six months every new born baby in the institution of which I had charge, was given 100 to 150 c.c. of saline solution by hypodermoclysis and six per cent sugar water by mouth every day for three or four days. No cases of icterus or inanition fever developed and usually the weight curve did not go below the birth weight. In most cases sufficient water by mouth is all that is needed, but with jaundice and fever hypodermoclysis is indicated.

The baby should be put to the breast once or twice the first day after mother and babe are rested, and on regular schedule thereafter. Colic nearly always develops on the third and fourth days because the breasts are engorged and the baby receives too much. Manual expression, or the electric pump, should be employed to prevent soreness during the first week of lactation.

Tight fitting binders should not be applied; proper support with the so-called "aerator" may be necessary. The constant use of boric acid on the nipples is inadvisable; occasional cleansing with soap and water or with equal parts of alcohol and water if tender is sufficient.

After the fifth day usually the routine is established, and there is little trouble. In hospital deliveries however, the physician is usually called on the baby's first night at home. The young mother and father with first full responsibility suspect something is wrong. It is advisable to have at least a practical nurse for the first few home days.

The baby's weight at weekly intervals is often enough for guidance and the weighing is best done in the doctor's office. Mothers are much happier without scales in the home except in unusual cases. The milk taken at the nursings varies in wide limits, and frequent

weighing will be misinterpreted. Weighing the baby before and after nursing is of little value in determining whether sufficient milk is being obtained. The weight curve over four or five days is much better.

Nearly all normal babies get too much milk; but no harm is done as the excess is taken care of by regurgitation or as excess fat. A frequent complaint is that the baby's bowels move after each feeding. This is not diarrhea and without other symptoms and with normal weight gain is no cause for worry. A baby may have six or seven green mucous stools a day and yet be happy and thriving. In such cases the mother should be reassured and the baby left alone. Babies are often brought in with two complaints—green stools and too much crying. Is it over-feeding or under-feeding? The family usually thinks the child is not getting enough, or that the breast milk is too weak. The under-fed baby does not cry much unless there is practically no breast milk.

The cause of green stools and too much crying usually is too frequent nursing with an abundant milk supply. Colic and crying lead to increased frequency of nursing which in turn adds to the trouble. The diagnosis of over-feeding is made on symptoms and by determining the amount of milk the baby is getting in 24 to 48 hours. Laboratory examination of the milk is useless. Close observation of the baby is helpful. The only component of human milk that varies is the fat content. Rich milk occasionally may cause colic. This may be relieved by having the infant nurse only the first portion of milk from both breasts. If the fat content is low the baby will thrive if there is sufficient quantity.

When over-feeding exists the baby should be put on a strict four hour schedule. To cut down the nursing time to 10 or even five minutes does not work. Most normal babies get the most of their feeding in the first few minutes of nursing. Best results are obtained by complimentary feedings before the breast is given. One to two ounces of plain water, barley water, casec water, or protein milk may be used, depending on the age and severity of the case. A similar procedure can be followed in dyspepsia from parenteral infection. Most text books say a sedative is not needed in dyspeptic colics. If a prescription is not given the baby will likely get paregoric. Phenobarbital,

an eighth to a fourth grain before or with each nursing, is effective and less habit forming than paregoric and something is usually necessary until the feeding is corrected. Underfeeding is best determined by the appearance of the child, such as evidence of dehydration and poor tissue turgor, and by the weight record.

If the mother's supply is inadequate, the treatment is to supply more food through regulation of nursing, stimulation of the breasts, and complimentary feeding. Weaning is not to be considered. The strict four hour schedule should be maintained. Both breasts are to be given each nursing, alternating the first to be given each time. The breasts after each nursing should be thoroughly emptied by manual expression. If the amount is still too small a bottle is given after the nursing. It is important not to have the milk come too easily from the bottle, as this will quickly spoil the child for nursing.

Prepared milks are desirable for complimentary feeding because they can be safely given concentrated. If the baby needs, for example, four ounces to make up a full feeding, a formula consisting of two tablespoons of whole dried milk, and one teaspoon of dextri-maltose in four ounces of water may be used. Frequently the bottle may not be emptied as the amount of breast milk varies at each nursing.

Contra-indications to breast feeding, must be decided in the individual case, except in active tuberculosis, with positive sputum, the baby should be removed from the mother at birth. In the southwest, however, are many quiescent cases that may safely nurse their babies. In eclampsia, post-partum hemorrhage, puerperal sepsis and nephritis, discontinuance of the breast may be necessary for a time, but when conditions permit, attempts at restitution should be made. Nursing in epilepsy is purely a relative matter, depending on the severity of the disease. Recently an epileptic under treatment was able to successfully nurse her baby for five months. Syphilis in the child or the mother is not a contra-indication to nursing, unless the disease was acquired after the child's birth. Children with congenital syphilis are notoriously bad feeding cases, and do much better on breast milk.

Pregnancy rarely occurs during the first three months. Experience alone is sufficient

to convince one of the fallacy of weaning because of pregnancy. During menstruation a slight looseness of the bowels or vomiting, never severe enough to call for weaning, may occur in the nursing. Inability to nurse previous children is no criterion. I have a patient who sincerely tried to nurse two previous children under good medical supervision without success and is now nursing a baby without difficulty. In harelip or cleft palate, the baby should be given breast milk, and an operation performed as early as possible.

In artificial feeding there has been only one outstanding improvement in the last two to three years, and that is soft curd fresh milk. Digestibility of milk depends to a great extent on the size and consistency of the curd. Evaporated and dried milks with fine soft curds therefore have been popular as infant foods. In one El Paso dairy, the cows have been given the curd test, and part of the certified milk for the past three years has had soft fine curds and is a marked improvement over the ordinary fresh milk in infant feeding. This milk can be given undiluted at an early age if the baby will take only small quantities at a feeding or in complimentary feedings where concentration is necessary. Certified milk dairies throughout the country are recognizing this milk.

In conclusion: If there is proper desire and effort on the part of the doctor and mother, nearly all babies can, and should, have breast milk during the first three months of life; close observation of the baby is the best and most reliable index of proper feeding; and successful feeding depends upon close attention to what some consider unimportant details.

LUETIC MENINGITIS AND GUMMA OF THE BRAIN A CASE REPORT

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and

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A robust young white man, age 20, on May 19, 1935 had burning red eyes, his mother thought, from driving in the dust. He continued at his work on a road construction project for three more days. He developed dizziness, blurred vision, and undue hunger.

On May 23rd, he was confined to bed with nausea and vomiting, refusing to eat, saying that the sight or odor of food nauseated him. On May 24th he was in a stupor, but aroused to answer questions. When asked if he had pain, he placed his hand to his head. He did not voluntarily open his eyes. Nausea and vomiting ceased. On May 25th he was brought to the hospital comatose.

He appeared to be a healthy well developed young man in natural sleep—not restless. He did not respond to questioning nor to shaking, but reacted to painful stimuli. His temperature was 99.4, pulse 60 per minute, of strong volume, blood pressure 182/92. Pupils were contracted, of equal size, not reacting to light. There was a slight patellar reflex and a decreased cremasteric reflex on the right. The Babinski was positive bilaterally.

After dilating the pupils, Dr. J. M. Britton reported: "Slight swelling around the right optic nerve; much more around the left."

His spinal fluid was clear, but under greatly increased pressure, squirting four inches from the needle. About 25 c.c. were removed. Dr. Waite reported: Globulin plus; cell count 50; Wasesmann four plus in two dilutions.

White blood cell count was 11,500 with 70 per cent polymorphonuclears and 30 per cent lymphocytes. Blood sugar was 100 mg. per 100 c.c. A catheterized specimen of urine had a trace of albumin, about three per cent sugar, acetone positive, innumerable white blood cells, and a few squamous epithelial cells. He had recently been treated for urethritis.

After the first spinal puncture, hypertonic glucose was administered intravenously followed shortly by two grams of tryparsamide; daily mercury inunctions were begun. About six hours after the tryparsamide he responded to questions, took nourishment, and complained of no pain except burning in the right eye, but was so restless barbiturates were given. After rising to 100.2° on the second day, his temperature receded to normal.

On May 30th stupor returned. It was difficult to arouse him even for nourishment. Spinal punctures were done May 27th and 31st and June 2nd and 4th. The pressure was always increased. On June 2nd a second injection of tryparsamide—gm. 2.0—was given. The coma seemed to deepen.

About 10 A. M. June 4th a venoclysis of

500 c.c. of 10 per cent glucose in normal saline was given. The patient's condition appeared unchanged. About 2:15 P. M. he suddenly became cyanotic, and in 20 minutes was dead. According to the nurse his heart continued a short period after respiration ceased.

Post-mortem examination by Dr. W. W. Waite: The body is that of a fairly well nourished white man with no external marks of violence; there is little subcutaneous fat. The muscles are well developed. The abdomen has nothing of importance, except that the spleen is twice normal size. On section the lymphoid nodules are prominent and numerous. In the apex of the lower lobe of the right lung are several small wedge shaped hemorrhagic areas—firm and consolidated. Over the lower portion of the lobe there are other smaller hemorrhagic areas. In the left lung field there are similar areas. The kidneys have dark red hemorrhagic areas on the surface and throughout—most marked in the left. There are fine adhesions over the surface of the brain; the pia is thickened and adherent everywhere. The lateral, and the third, ventricles are dilated. On the wall of the right there is a tumor with bluish walls approximately 50 by 30 mm. of pale brownish spongy material containing fluid.

Anatomical diagnoses: Chronic meningitis; tumor of the wall of the third ventricle; distension of third ventricle; multiple pulmonary infarcts; multiple kidney infarcts; hypertrophy of the spleen.

Microscopic examination: The tumor mass has short spindle cells, numerous blood vessels and in places necrotic areas surrounded by spindle shaped or endothelioid cells arranged radially. In some of these areas giant cells are present.

Diagnosis: Gumma of the brain.

Discussion: In late syphilis, gummata (or syphilomata) of the brain and spinal cord have an incidence of six to 12 per cent. The arteries are most frequently involved; kidneys and liver are next in frequency; the brain occupies fourth place. Since spirochetes are distributed hematogenously, meningeal involvement may occur simultaneously with syphilomata.

This case is interesting because of the neurosyphilis and gumma of the brain in a man 20 years of age, the virulence of the infection, and sudden death by respiratory paralysis. Did

tryparsamide produce the infarcts of the lungs and kidneys, or did they follow intravenous injections of glucose solution? There is a medico-legal aspect in that he took a life insurance policy two months before he died; did he have symptoms at that time? Did he know he had syphilis?

STUDIES ON THE NATURE OF PHAGOCYTOSIS

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(Continued from February Issue)

Leucocytic Bacterial Substances and Leucoproteases.

Most of the researches associating leucocytes with bacterial substances were carried out before the dual mechanism of sensitizer and alexin in bacteriolysis had been worked out. In consequence conclusions were formulated from the mere facts of the presence of bacterial or hemolytic properties in cell extracts, without determining whether or not they were heat stable or reactivation was possible. Most of the earlier workers, also, paid little attention to the separation of the cells and serum of leucocytic exudates. The first to give attention to this was Hahn who, like his predecessors, concluded that bactericidal leucocytic substances were identical with alexin. Doubt was first cast upon this by Schattenfroh who worked with leucocytes extracted and suspended in physiological salt solution. He found that bacterial substances were relatively thermostable, withstanding a temperature of 56°C.

Moxter, a little later, working with cholera spirilla also came to the conclusion that the leucocytic bacterial substances were not identical with those found in the blood serum.

Patterson showed that leucocytic bacterial substances, like many enzymes and serum bacterolysins, may be precipitated out of solution with alcohol and ether; but he separates them from serum lysins and complement. Schneider has confirmed the original conclusions of Schattenfroh regarding heat stability of extracted leucocytic bacterial substances, and has shown that after inactivation by heat these substances are not reactivable by the addition of fresh leucocytic extracts. He also

showed that the yield obtained from leucocytes of immunized animals is not greater than that obtained from normal leucocytes.

It appears, therefore, that contrary to Metchnikoff's first supposition, the enzymes that bring about the digestion of phagocytized bacteria within the cell are not identical with those which bring about a similar extracellular digestion. In addition to the demonstration of a definitely different structure in bacterial leucocytic extracts, as is evidenced by their heat stability, negative evidence exists that neither true alexins nor sensitizers have been extracted from such cells. Hemolytic extracts are extremely heat resistant, are alcohol and ether soluble, and do not act as antigens. They are different from the serum hemolysins and are probably closely related to the hemolytic lipoidal substances described by Noguchi. Further strong arguments against assuming the presence of hemolytic alexin in the microphages have been advanced by Gruber, who showed that no extra-cellular hemolysis takes place when leucocytes are brought together with sensitized red cells. Neufeld later showed that even after phagocytosis of such sensitized cells hemolysis is very much slower, and of a different character from extra-cellular serum hemolysis.

It is probable, then, that digestion of bacteria and cells within the phagocytes is carried out by substances not identical with those taking part in serum lysis. It is also very probable that the intra-cellular process is dependent upon several enzymes.

In addition to the bacterial substances extracted from leucocytes a number of true enzymes, called leucoproteases, have been obtained, but after a careful review of the literature on this subject it appears that they possess no direct significance in bacterial immunity. Their function seems to lie in the reabsorption of dead tissues, fibrin, blood clots et cetera. However, it is interesting to note that the most active protease is obtained from pus as it forms about acute infections or other stimuli which lead to the accumulation of polynuclear leucocytes; it is apparently absent from tuberculous pus.

We are convinced, at any rate, that leucocytic bacterial substances and alexin are not identical and that both play some part in phagocytosis.

Factors Affecting Phagocytosis.

In 1902 Leischman introduced a technique by means of which it became possible to observe the process of phagocytosis with fresh serum *in vitro*. The following year Wright and Douglas utilizing this technique, and improving upon it, evolved a method by which phagocytic activity could be quantitatively measured with reasonable accuracy. Their researches were carried out by mixing equal volumes of bacteria, serum and leucocytes (in citrate suspension), allowing these elements to remain together at 37.5°C., for varying periods, then staining the mixture on slides and determining the degree of phagocytosis by counting the number of bacteria taken up by each polynuclear leucocyte. The most important result of these investigations was the conclusive definition of the function of the serum in the process of phagocytosis; namely, that it in no way "stimulated" the leucocytes in the sense of Metchnikoff, but acted entirely upon the bacteria, preparing them for ingestion. For this reason Wright coined the word "opsonins" (I prepare food), for the serum constituents which brought about this effect, believing them to be new antibodies entirely distinct from any other serum antibodies heretofore recognized. Wright concluded that the role of the leucocyte in taking up bacteria was entirely dependent upon the opsonin content of the serum. This viewpoint is not generally held at present as many investigators have found that spontaneous phagocytosis takes place in the absence of serum.

Wright and Douglas' work was at first done with normal serum or normal citrated plasma, and in this case they found that the opsonins were essentially unstable, being easily weakened by exposure to light or heat, and even when preserved in sealed tubes in the dark they diminished noticeably within a few days. Other writers working with opsonins in normal serum have confirmed its instability, although Wright himself admits that heating to 60° C., does not entirely destroy it, though it reduces the opsonic power to a minimum. When an animal is immunized against a micro-organism, or other cellular antigen, such as red blood cells, a marked specific increase in opsonins occurs, but unlike the opsonins of normal serum these newly formed elements

in the immune serum seem to possess a much greater resistance to heat.

We may accept as definitely determined, therefore, that there is a qualitative difference between the serum components which imitate phagocytosis in normal serum (normal opsonins) and those which carry out the same function to a much more powerful degree in immune serum. This is the more surprising since in the case of all other antibodies (ly-sins, agglutinins, etc.), it has been shown that in structure and mode of action the antibodies of immune serum are in every way qualitatively similar to the corresponding ones of normal serum, representing merely a specific quantitative increase of substances originally present in small amounts.

The difference between the normal and immune opsonins has added much difficulty to the investigation of their nature, but it is immediately apparent that normal opsonin has the thermolability of alexin, while the immune opsonins or bacteriotropins behave, in this regard, like sensitizer.

The similarity of normal opsonins with alexin or complement has been emphasized by Muir and Martin and by many others. The fact that both are thermolabile supports this view, as does the absence or presence of both in edema fluids. Although this parallelism is striking it does not on this account mean that the two are necessarily identical. It may signify merely that the alexin is a participant in normal opsonic action, essential in that it activates a thermostable opsonic constituent just as it activates hemolytic or bactericidal sensitizer.

One of the most suggestive studies upon this question is that of Cowie and Chapin. Dean had previously shown that, although heat immune serum was capable of exerting opsonic action by itself, this action could be enhanced by the addition of a little diluted, fresh, normal serum. Cowie and Chapin, however, carried out similar experiments in which they attempted to reactivate heated normal serum by the addition of small amounts of diluted fresh serum, by itself slightly opsonic. Their results were less marked than when an unheated serum was used.

It seems fair to conclude that normal opsonins depend upon the cooperation of heat-stable and heat-sensitive bodies. The heat-

stable body, analogous to normal sensitizer or amboceptor, is specific and reactivable by the heat-sensitive body which appears to be identical with, or very closely related to, alexin.

In considering this conception it is well to remember that in normal inactivated sera the thermostable opsonins differ in action from the bodies we speak of as amboceptors or sensitizers in that they functionate for phagocytosis (entirely without alexin), while neither bactericidal nor hemolytic effects can be brought about by sensitizer alone. This fact would tend to exclude the identity of this thermostable opsonin and sensitizer and it is, indeed, an argument against identification; but in opsonic action, we remember, there is merely a sensitization to the action of the phagocyte. This phagocyte may be in itself capable of furnishing a small amount of substance comparable in action to alexin, and from our own observations, which will be detailed later, we believe this to be the case. At any rate, the phagocyte is a living cell which may well be capable of supplying the necessary activation.

It was suggested by Muir and Martin that bacteriotropins might be identified with agglutinins, inasmuch as they possessed resistance to heat, were active without apparent dependence upon alexin, and could not be reactivated by the addition of fresh normal serum when once inactivated. It was their opinion that the bacteriotropin is a sensitizer which sensitizes the leucocytes for phagocytosis as it sensitizes to alexin for bactericidal effects, and to electrolytes for agglutination. Apart from thermostability, further similarity lies in the fact that the bacteriotropins are strictly specific and may be specifically absorbed out of immune sera by their respective bacteria. Like amboceptor they are specifically increased by the treatment of animals with any given microorganisms, and may be incited not only by the injection of bacteria but of blood cells as well. Hektoen, Neufeld, and others maintain, however, that the two substances are not the same and that the bacteriotropins are distinct and independent antibodies. They base their arguments principally upon the fact that bacteriotropins lead to phagocytosis without the participation of alexin, whereas the bacterial sensitizers or amboceptors become active for lysis only when

alexin is present. It by no means follows, nevertheless, from mere lack of parallelism that the two serum functions are dependent upon separate antibodies.

The preceding discussions have ignored the possibility that apart from opsonic or bacteriotropic action on bacteria there may be a difference in phagocytic energy which depends on inherent properties of the leucocyte itself. There is a considerable amount of evidence which points to differences in phagocytic powers residing in the leucocytes themselves independent of the serum. Rosenow and his associates have shown that the inherent phagocytic power of leucocytes may vary not only in health and disease, but differences may exist between the cells of apparently normal persons.

Resistance of Bacteria to Phagocytosis.

Of the three factors concerned in phagocytosis we have considered two, the serum and the leucocytes. We have still to discuss the bacteria themselves as a variable factor in determining the degree to which phagocytosis will take place.

This problem was first investigated by Denis and Marchand in connection with streptococcus immunity. Marchand showed that leucocytes would take up non-virulent streptococci in the presence of normal serum, but under similar conditions virulent streptococci were phagocytosed only slightly or not at all. He determined further, that this resistance to phagocytosis remained unchanged after the virulent organisms had been killed by heat, and washed clean of culture fluid. It seemed, therefore, that resistance depended upon the condition of the bacterial body and not upon substances given off to the environment. These experiments, as well as those of several other observers, make it clear that differences in virulence between different species of bacteria, as well as between different strains of the same organism, depend, at least in part, upon the resistance which the bacterial bodies oppose to ingestion by the leucocyte.

Rosenow studied these conditions extensively in pneumococcus infection. Seventy-five strains of this organism were all found to resist phagocytosis when first isolated and the resistant conditions was associated with virulence to rabbits and guinea pigs. It was found, moreover, that the resistance to phagocytosis

was dependent upon the inability to absorb opsonin. For, while phagocytizable, non-virulent pneumococci absorbed specific opsonin from the serum, the virulent ones failed to do this to the degree of their virulence. Extraction of the bodies of the virulent organisms in normal salt solution yielded a substance which inhibited the action of pneumococcus opsonin, a true antiopsonin which Rosenow called "virulin."

These phenomena are probably not due to a special aggressive substance or virulin, but are readily explained on the basis of later information concerning the soluble specific carbohydrate haptenes and the relationship of these substances to capsular material (Zinser). That capsulation inhibits phagocytosis as it inhibits agglutination is well established. Gruber and Futaki injected capsulated and uncapsulated anthrax bacilli into guinea pigs and noted that the leucocytes would take up the uncapsulated organisms, leaving the surrounding capsulated ones undigested. This is the secret of the greater virulence of the capsulated microorganisms and it probably depends upon the fact that the soluble specific hapten concentrated in the capsule, and given off to the surrounding medium, unites with the antibody and thus diverts them from the bacterial cell which, in consequence, fails to be sensitized. The resistance of capsulated organisms to union with antibodies has often been noted. Sai investigated this problem using serum-leucocyte mixtures in which avirulent pneumococci would not grow but in which virulent ones would develop. By the addition of various amounts of soluble specific substance to the mixture avirulent pneumococci were enabled to grow as did virulent ones. Since leucocytes are not injured by the soluble substance, it seems likely that this material, by uniting with the antibodies, has protected the pneumococci in the manner in which the capsular material does for the virulent organisms.

Finally, the effects of bacteriophage on the phagocytic power of leucocytes is to be considered. Although a tremendous amount of investigation has been done on the behavior of bacteriophage we have been unable to discover a single reference to the possible effect bacteriophage may have on the process of phagocytosis. This may, indeed, be important

and it is our intention to investigate this in the near future.

(To be concluded)

MEDICINE AND MEN

A Discussion of Compulsory Sickness Insurance

FREDERIC E. SONDERN, M. D.
President Medical Society, State of N. Y.

(Reprinted from N. Y. State Jour. of Med., by permission of Debate Handbook. Bold face is ours.)

(Continued from February Issue.)

Let us observe what happens in European countries which have adopted this system. I should like first to address myself to conditions in England, which have been a matter of first-hand observation.

In England it is difficult for the panel physician to get all the facts from the patient. The patient knows that the record made of his history and illness is inspected by the regional medical officer as well as by the insurance commissioner of the approved society. He is therefore guarded in his disclosures concerning himself, contrary, possibly, to his best interests. There are rigid restrictions as to the cost of drugs and appliances which hamper the doctor and affect the patient's comfort. Officials pry into details of the relationship which tends to lessen the patient's respect for the doctor. Supervision of the panel doctor is exercised by divisional and regional medical officers. These executives may be asked by the panel doctor to see patients for aid in diagnosis, or they may be asked to render the same service by the approved societies over the head of the panel doctor. In 1932, 626,853 patients were thus examined. For the purpose of diagnosis, 42 were examined at the request of the panel doctor, while 1,774 were at the request of the societies. It is part of the English system that panel doctors shall certify a patient's incapacity to work, in order for him to get benefits from the fund. It is astonishing to find that for purposes of certification, not diagnosis, requests for examination by superiors to the panel doctor were 3,348 at the request of the doctor, and at the request of the societies over the heads of the panel doctors, 621,689.

What is the conclusion to be drawn from this? Obviously that the non-professional element in the medical situation demands super-

vision of the panel doctor, only slightly for purposes of diagnosis, but extensively for the purpose of getting benefits for inability to work. It is not difficult to reconstruct the typical scene which in the natural course of things is enacted in many of these instances. The approved societies are interested in keeping down the costs of medical care, preventing losses from the fund, or possibly in getting favors or preferences for friends. Their viewpoint, as they inject themselves into the situation, is not medical. They exert pressure on the panel doctor to send a man back to work who has long been idle, or to get a man certified as still incapacitated whom the doctor might possibly consider well enough to work. So, under this system, the "boss" doctor is summoned. He sees the patient, and no matter what this superior may decide, the panel doctor has in a sense lost the confidence of the patient. Perhaps, in some cases, a better diagnosis may be the result, and in others, the decision as to whether the man can work or not, may be more just by reason of this supervision. But there are only a few appeals from the panel doctor's decision that the patient need not work; most of them are to keep him from having to go back to his job. And the glaring fact in the above figures which points an accusing finger at the whole system of compulsory insurance, is that these appeals for regional or divisional doctors to supervise the work of the panel doctor were so few for the purpose of diagnosis, so many for the purpose of affecting sick benefits. There can be no other conclusion drawn from the fact that there were a total of 1816 appeals for diagnosis, and 625,037 for certification of incapacity, than that the compulsory insurance scheme breeds a relationship in which the prevailing emphasis is not the skillful treatment of disease.

It should be explained here that the Epstein law, in its present form, does not provide for sickness insurance benefits. Neither did many of the compulsory sickness insurance plans in Europe, when they were first proposed. It is but a step, and a short one, from collectivist practice of medicine to collectivist indemnity for sickness, which could be expected to follow closely, and the two would soon be identified in operating technique.

Interest aroused by the foregoing figures relative to supervision of panel doctors, induced

me to turn to the 15th Annual Report of the British Ministry of Health for 1933-1934. This is a book of some 400 pages. The subject of National Health Insurance forms but a minor part of the report and even so it quotes many conditions and figures of interest to us, particularly in view of the present day agitation for this type of medical care, the more so as they are at considerable variance with those often quoted by the advocates of compulsory sickness insurance in this country.

There were 15,150,000 persons insured under the system and there were 15,500 physicians who did this type of practice. Thus, if each physician had an equal number of patients on his panel, his patients would number 970, and with a remuneration of 9 shillings per patient per year the income would be £437, or 2,185 present day dollars, but as this amount was subject to a 10 per cent emergency deduction, it is reduced to \$1,967. Even this amount was not net, being subject to additional details to be mentioned later, to say nothing of income and other taxes. It must not be forgotten that all panel doctors did not have the same number of patients by any means, thus the majority had an income of less than \$1,967, and the minority received larger sums. This is scarcely compatible with the quoted average of £500 to £600, or \$2500 to \$3000 so often mentioned in sickness insurance statements made in the United States. Let us assume that 20 per cent of the doctors do have an income of £600 or \$3000, what would be left for the remaining 80 per cent? Exactly an average of \$1700.

Let me analyze if you will allow, other figures quoted in the report, which are instructive to us.

The cost of medical care is detailed as follows: The total medical benefit cost was £8,420,000 or \$42,100,000. Of this sum the insurance doctors received £6,077,000 or \$30,385,000 divided as I have stated. The remaining £2,343,000 or \$11,715,000 was allowed as follows: £1,863,080 or \$9,315,400 to the insurance chemists for drugs and appliances, an average of 62 cents per patient per year. Even so there is a strong paragraph in the report on the investigation of excessive prescribing and while the accusations were numerous the convictions were few, but amounts as high as \$100 were deducted from several doctors' incomes as fines.

£196,000 or \$980,000 was allowed for medicines supplied by doctors personally, and £203,000 or \$1,105,000 was paid doctors on account of mileage to outlying districts—averaging about \$128 per panel doctor.

The sum of £63,900 was paid on account of insured persons exercising their option to claim treatment through approved institutions, and £7,250 on account of insured persons who were required or allowed to make their own arrangements for medical care. In other words, a total of \$355,750 was allowed for the purposes stated.

Finally £9,000 or \$45,000 was set aside for post-graduate study courses. Of this amount only £2,830, or \$14,150 was used in 1933 for this purpose in grants to 102 doctors. This equals \$139 each. Can you visualize what sort of post-graduate course can be had with board and lodging for this sum? Let us assume for the sake of argument that the whole amount of £9,000 or \$45,000 had been used. This would mean a bit over \$3 per year per panel doctor, and each one could thus be entitled to the large sum of \$15 if each would seek instruction once in 5 years. These figures speak for themselves, and I quote them on account of the rosy description of this feature by the proponents of compulsory sickness insurance in this country.

I hoped as I read the report that the figures quoted would be followed by equally detailed ones concerning administrative costs. The quotations in this regard are rather involved however as they include other "benefits" so that it is impossible to figure the net cost of the sickness insurance from them. The inclusive figures as follows are of interest:

Receipts for 1933

Contributions (Employee, Employer)	£22,020,000	\$110,100,000
Interest and Other Receipts	4,870,000	24,350,000
Parliamentary Votes, Grants	5,056,000	25,280,000
Total Receipts	£31,946,000	\$159,730,000
<i>Expenses</i>		
<i>Medical Services</i>		
(Prev. Detailed	£ 8,633,000	\$ 43,165,000
Sickness Benefit	9,562,000	47,810,000
Disablement Benefit	5,095,000	25,475,000
Maternity Benefit	1,296,000	6,480,000
Other Benefits, incl. Sanatoria	2,204,000	11,020,000
	£26,790,000	\$133,950,000

Cost of Administration

Approved Societies Ins. Committee:
£3,923,000 \$19,615,000

Central Departments

841,000 4,205,000 4,764,000 23,820,000

Total Expenses.....£31,554,000 \$157,770,000

It seems unfortunate for our purpose that administrative costs are not as detailed as those for medical services, but in any event, large sums of money are concerned.

What would be the result of such a system in our country, with all the opportunities it offers to "administrators?"

After all, the matter that concerns us most is the quality of the medical services rendered under such auspices. Much has been said and written in this regard, and I can but repeat that in my experience in England, the insured patient has little regard for his panel doctor and in the event of a serious condition, in his own words he secures a "real doctor" if it takes the last shilling he has.

From 50 per cent to 60 per cent of the patients at the free clinics of London hospitals are insured persons who could have consulted their panel doctors without cost. It is a common experience in these clinics that no actual diagnosis has previously been made by the panel doctor, not because of lack of ability on his part, but on account of the short time he is able to devote to the insurance portion of his practice.

The following is no uncommon experience at the panel doctor's office in England. Long before the office hour a line of patients may begin to form at the door. It is opened on the stroke of the office hour. Perhaps they go in one by one, or in small groups. Shortly they begin to come out of another door. This is mass medicine. It will not, it cannot, result in an improvement in preventive medicine, which is one of the chief arguments of its proponents. Yet such a claim is made in the report for 1932 of the Chief Medical Officer, who states that the 21 years' experience with the system justifies the original prediction that it would be an important factor in preventive medicine. But the London Times of September 27, 1934, quotes from the last available official figures, and states that among the insured population only, excluding loss due to sickness for which benefits are not payable, there was time lost to industry through sickness in 1933 a total of 29 million weeks' work, or 12 months' work for 558,000 persons. This is the equivalent of 12½ days per workman per year as compared with

9 days before the compulsory insurance went into effect. Thus there is more sickness instead of less, which should perhaps lead us to call this type of practice sickness "assurance" instead of "insurance." In Germany the loss to industry through sickness has trebled in the 50 years of sickness insurance while in the United States this average loss of time per workman per year is about 6½ days which is no increase over the figures of 25 years ago.

In support of the statement that sickness insurance does not improve the distribution of preventive medical care, I wish to quote from the Journal of the American Medical Association for April 13, 1935.

"Diphtheria morbidity and mortality rates seem to offer a fairly sound test of the quality of medical service received by a community. The conquest of diphtheria is now in process. The methods of achieving victory are known. The date of complete triumph depends on the way in which these methods are applied to the entire population. Diphtheria death rates vary directly with the extent to which these known and tested methods of prevention and treatment are made available to the population. This situation furnishes conditions, almost laboratory in type, from which to determine the social value of a medical service.

"The arguments for compulsory sickness insurance may be summed up in the claim that it removes the economic obstacles to the giving of medical service and thereby secures a wider and more effective distribution of that service. Because of the interest in the progress of this conquest of diphtheria, statistics have been gathered throughout most modern nations.

"The League of Nations has assembled the reported diphtheria cases from 1923 to 1933 for a number of countries.

"Variations in the number of cases between countries or in time within any country bear no relation whatever to the existence of insurance, unless it is a negative relation. The number of cases has increased in Germany and Austria, where the insurance system extends to the family, and also in England and Wales, where families are not included. The number of cases has declined most rapidly in Canada and the United States, where there is no sickness insurance.

"Promptness of treatment with immediate

application of recognized remedies determines the mortality. Again it is noted that the rate of decline in mortality is more rapid in the English and Scottish towns, where children are not included in the insurance system, than in Germany, where they are included. But the most striking fact is that in neither of these countries has the decline been as rapid as in the United States, with no insurance. These figures for the United States, however, do not tell the whole story. This country and Canada, unencumbered by insurance, are the only ones in which there seems to be a possibility of complete victory. In 1933 the following eleven cities of considerable size had no diphtheria deaths: Duluth, Elizabeth, Hartford, Rochester, Salt Lake City, Seattle, South Bend, Spokane, Springfield, Syracuse, Yonkers. Some of the very largest cities in the United States had death rates much less than even the low average. Some of these and their death rates per hundred thousand in 1933 were as follows: Philadelphia, 0.7; New York, 1.2; Baltimore, 0.7; Chicago, 0.2; Milwaukee, 0.8; Omaha, 0.9; St. Paul, 1.1; Minneapolis, 1.4; Oakland, 0.7; San Francisco, 1.2.

Judging by these facts, the conclusion seems inevitable that the very classes for which insurance is proposed are now receiving under a system of private medical practice, in the United States and Canada, medical care far superior to that which is supplied when the same classes are put under an insurance system."

(To be concluded in April issue.)

PHOENIX CLINICAL CLUB CASE AND DISCUSSION

An American, 57, entered complaining of recurrent hemoptysis.

For years he had had chronic cough. Eighteen years before he had had lobar pneumonia but had been especially well since except for chronic pharyngeal discharge and hacking cough. X-ray films taken six years before entry showed healed apical tuberculosis without evidence of activity. This impression was confirmed two years later. Four years before entry he began having slight shortness of breath upon exertion. Two years before entry he had a typical attack of coronary thrombosis with left ventricular infarct as shown by electrocardiogram. Six months before entry he had right upper quadrant pain radiating to the back, jaundice and clay colored stools which soon cleared up. Three months before admission he had hemoptysis—usually only streaking but occasionally as much as a teaspoonful of bright blood. The fol-

lowing month he was quite well but during the month before admission he developed malaise, dyspnea, weakness and a loss of six pounds in weight. During the past two weeks his temperature ranged from 99° to 102°. During this period he had occasional hemoptysis.

Physical examination showed a thin, perspiring, sleepy, elderly man. There was decreased chest expansion on the left. The left intercostal spaces were full. The lungs showed hyperresonance anteriorly and in the right back. In the left back there was dullness to flatness extending up to the midscapular region, with decreased to absent breath sounds and no transmission of vocal fremitus or spoken voice. It was not possible to determine the size of the heart because of hyperresonance. The heart sounds were heard best just to the right of the sternum, at the level of the fifth interspace. No murmurs were heard. The blood pressure was 85/60. Abdominal examination at this time was not remarkable. There was slight overcurving of the fingernails but no definite clubbing. Temperature was 100.8°, pulse 90 and respiration 20.

The urine was negative. The red cell count was 5,690,000 with a hemoglobin of 85 per cent. The white cell count was 17,000—83 per cent polymorphonuclears. The sputum was thick, mucopurulent, and contained small amounts of blood, numerous cocci but no tubercle bacilli; the stools were negative. The nonprotein nitrogen of the blood was 50 mg. A Hinton test was negative.

X-ray examination of the chest showed shifting homogeneous dullness occupying the left chest obliterating left diaphragm and heart border and displacing the heart markedly toward the right. In the upper left lung root there was a lobulated shadow with the appearance of large masses and numerous small dense lines extending outward. Similar lines were seen in the right apex. The remainder of the lung was clear. One film taken with the patient supine showed that the left main bronchus was smaller than the right.

After a chest tap on the second day and the introduction of a small quantity of air there was a fluid level. The heart and mediastinum were displaced toward the right. The chest fluid contained 4,700 red blood cells, and 670 white cells, 80 per cent of which were lymphocytes.

He was put on digitalis, 1½ grains a day. On the sixth day he began to vomit and complain of abdominal symptoms tremendously. At the end an ileostomy was performed which relieved his abdominal symptoms tremendously. At the end of 24 hours, however, he began to hiccup; he failed rapidly and died on the fifth postoperative day.

DISCUSSION

DR. GUY FRENCH: His recent hemoptysis was not sufficient within itself to cause his weakness, general malaise and loss of weight. The pathology is definitely located in the left pleural cavity. The comparatively low leucocytosis with an 83 per cent polymorphonuclear neutrophils and the fever is

evidence of infection which may be primary or secondary. A mass exists in left lung field causing pressure sufficient to force the heart to the right. There was fluid and pneumothorax; this fluid contained 4700 R. B. C. and 670 W. B. C., 80 per cent of which were lymphocytes. The increased pressure and the sanguinous fluid in the chest leads me to suspect a tumor as the primary pathology with a secondary infection or an activation of his old pulmonary tuberculosis. I eliminate Hodgkin's disease due to lack of other findings and the age of the patient; rather would I think of carcinoma. I have no reason for thinking it not to be primary as there is nothing in his history of physical findings to direct my attention elsewhere except that he appears to have developed an ileus before he expired, the cause of which I think probably has no relation to the chest pathology.

FRED G. HOLMES: The presenting symptom being hemoptysis, I enumerate a few of the more common causes of it. Chronic pulmonary tuberculosis, bronchiectasis, heart disease, echinococcus cyst, and new growth either primary in the lung or secondary.

The history is extremely suggestive of bronchiectasis. Lobar pneumonia followed by a chronic persisting cough and expectoration makes the diagnosis of a small amount of bronchiectasis almost certain. Is it possible that the condition in the lung could be wholly one of bronchiectasis? Bronchiectasis is as likely to give bloody expectoration as is tuberculosis. Furthermore, it may give a pleurisy with effusion. The rounded masses around the hilus on the left may be retained sputum and excavation. I have not observed this in any case of bronchiectasis. Furthermore it seems that bronchiectasis could not have caused his death. If the pathology above the diaphragm was in any way connected with that below the diaphragm I believe it would not be bronchiectasis. He had a slight curving of the nails which goes with bronchiectasis; however, that diagnosis does not seem to satisfy me in this case.

From the history it is shown that he had an apical tuberculosis which had apparently healed. Is it possible that this is an exacerbation of his old tuberculosis? Cough and bloody sputum are almost routinely found in tuberculosis. However, in the great majority of cases tubercle bacilli can be found on careful examination. The fluid in the left chest would be in perfect keeping with tuberculosis, though bloody fluid is not common. This amount of tuberculosis would not kill the patient in the manner described. A complication below the diaphragm could have killed him. The description of the lobulated shadow in the left lung is hardly that of tuberculosis. Let us discuss something else possibly returning to tuberculosis later.

The history indicates definite coronary disease with occlusion two years before with moderate decompensation the last four years; however, this is hardly the type of death we would expect if the

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SOUTHWESTERN MEDICINE

Printed by THE A. C. TAYLOR PRINTING CO., Phoenix, Arizona
Published monthly for the Board of Managers of the four constituent societies.

VOL. XX.

MARCH, 1935

No. 3

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THE PHOENIX CLINICAL CLUB (A Post-Graduate Study Club)

In other columns we have a series of discussions by four of a group of about 24 Phoenix physicians constituting the Phoenix Clinical Club. This group was organized in 1928 by 12 physicians. Dr. W. Warner Watkins, a former editor of Southwestern Medicine, was the promoter of the idea of this post-graduate study club; it was his thought that doctors of medicine, who devote themselves entirely or largely to special lines of practice, need to enter into general discussion of all types of cases in order to keep themselves best able to comprehend the problems of their own specialty. The oculist, the pediatrician, the surgeon, the internist, the urologist, the dermatologist, the obstetrician, etc., match wits in this club in diagnostic problems of the most difficult sort.

Eight of the 12 original members have continued with the club from the start. A ninth is with the club after having withdrawn for two to three years. The membership has been gradually increased to the present number. During the years since the club was organized a number of physicians have been invited into membership; nearly every invitation issued was accepted. A good per cent of the new members soon fell by the wayside. They seemed not to like to work as hard as necessary to carry their share of the work.

In the beginning the rules were strictly enforced allowing no absence without paying the club treasury the one dollar which would have gone for the luncheon had the member been present. Even absence from the City was not accepted in lieu of the one dollar fine for each absence. In late years fines have not been assessed and the attendance has continued won-

derfully near a perfect score entirely because of the keen interest of the members.

In the main the plan of study has been to give mimeographic copies of Cabot case records to the members three or four of whom are designated to study and discuss the case. Now and then a record of a local case is given out for study.

In late years the membership has been divided into teams, with three members designated as judges. One member of each team discusses the record for study at each meeting. The judges grade the discussions after the autopsy findings are read. A team also is given certain credit for attendance and for furnishing local case records. All credits given members of a team are summed up every three or four months. The winning team is given a dinner at the expense of the other three teams.

From the enthusiasm of the members of the club, the regularity of their attendance, the rare failure of a member to be present with his discussion when so scheduled and the attention given the discussants, the members are profiting from this post graduate study. The papers prepared by the club members frequently show that extensive surveys of medical literature have been made in preparing discussions.

The Yavapai County Medical Society of Arizona started this type of post-graduate study several years prior to the time of the organization of the Phoenix Clinical Club of the Maricopa County Medical Society, and are still continuing them.

"Men and Medicine" is the title of an article which we are reprinting—serially—from the Debate Handbook and which, in our opinion,

NEW MEXICO STATE MEDICAL SOCIETY, CARLSBAD, MAY 6, 7. 8

seems to present unusually strong arguments against state medicine. Every one of our readers should read this article from beginning to end in order to clarify his mind upon the subject. The first part of the article which was run in February was in eight point, but in order to give more prominence to the article we are carrying it this time in ten point.

The medical exhibit at the Texas Centennial Exposition to be held at Dallas from June 6 to November 29 will have a medical exhibit telling the "Story of Life" in language understandable to the layman. This exhibit will be the greatest of its kind ever assembled on the Western Hemisphere paralleled only by the one in the Dresden Museum. This "Story of Life" will far exceed the pioneer adventure in the story of medical progress depicted at the Century of Progress and which attracted phenomenal interest and phenomenal crowds. The three main divisions will depict botanical, lower animal, and human life, showing that all depend upon similar chemical and physical processes. An interesting feature will be a huge glass model of a man which will show the complete circulation of the blood in actual motion, the relation of one organ to another, and the interdependence of all.

Associate Public Health Engineers are being sought by the United States Public Health Service. Applications for the positions must be on file with the United States Civil Service Commission not later than March 16 of this year. The Associate Public Health Engineer receives \$3,200 a year and the Assistant Public Health Engineer \$2,600. The competitors will not be required to report for examination but will be rated on education and experience 70 and publications and thesis 30. We are in possession of certain facts that applicants may wish.

Venereal Disease Information is a monthly abstract journal published by the United States Public Health Service. The subscription price is 50 cents. It is the desire of the Public Health Service that this booklet have a wide distribution. It is an important feature in the Public Health Program in the fight now being waged against venereal disease. Venereal Disease Information is a summary of the

scientific developments in the control, treatment, and diagnosis of syphilis and gonorrhea. Abstracts from over 300 medical journals appear in it.

A POST-GRADUATE COURSE

A post-graduate course in "Neuropsychiatry in General Practice" will be held at the Menninger Clinic, Topeka, Kansas, April 20-25 inclusive. The course given last year will be repeated with revisions. Lectures, case studies, and seminars included in the five and a half day course will be exclusively directed to the application of modern neuropsychiatric principles to the cases which the general practitioner frequently sees in this field.

The course will be given by the members of the staff of the Menninger Clinic, assisted by Dr. Israel Wechsler of New York, and Dr. J. W. Kernohan and others from the Mayo Clinic, Rochester, Minn.

PHOENIX CLINICAL CLUB CASE AND DISCUSSION

(Continued from page 107)

primary cause was heart disease—coronary occlusion or heart failure. Pleural fluid may come from failing heart but more likely in the right than the left chest and it is usually not bloody. The heart as a primary cause of death does not appeal to me.

The upper right quadrant pain radiating to the back with jaundice and clay-colored stools points towards the liver and bile passages. Whether this was acute catarrhal jaundice or stones or chronic inflammation is hard to say. Perhaps there was involvement of the lungs from ameba or *ecchinococcus* primary in the liver. However, an amebic condition would almost certainly go to the right lower lung. *Ecchinococcus* cyst cannot be entirely disregarded. The lobulated mass in the lung could be from *ecchinococcus* as could the pleurisy with effusion. However, with it primary in the liver there should be no difficulty in distinguishing it. Furthermore, the outlook for *ecchinococcus* disease is good—the mortality being less than 10 per cent.

One must consider carefully new growth. The findings in the lungs are entirely compatible with it. The lobulated mass around the hilus on the left, the pleurisy with bloody effusion, the narrowing of the left bronchus, all fit in. One would rather expect in such a condition, however, not to find a red count above normal with a hemoglobin of 85 per cent; he may have been much dehydrated, the increase being merely relative. The sputum, thick, purulent, and containing blood, would be an extremely common finding with new growth. In fact all of the findings in the lungs can perhaps best be accounted for by this condition. Was the growth primary in the lung with secondary metastases in the abdomen or primary in the abdomen with the metastases to the lung

or were there two entirely unrelated pathological conditions?

Were the findings below the diaphragm compatible with a new growth? In my opinion they were. New growth in the liver is often times silent and unless of fair size might not be felt through the abdominal wall. Frequently a disturbance in the bile tract causes only temporary jaundice though the original cause persists.

One is confronted with the terminal event of ileostomy followed by death five days later. What condition occasioned this? The surgeon must have been in desperation. Some condition must have arisen or been found which was inoperable and ileostomy was to give relief from distension and perhaps complete stoppage of the bowel. The cause must be somewhere in the lower part of the gut, perhaps a carcinoma of the colon or of the prostate; the growth may have been a hypernephroma which is exceedingly likely to metastasize to the lungs and may metastasize to the liver. The new growth may have originated in the head of the pancreas.

It is very possible that the primary cancer was in the lung and that it metastasized to the abdomen. We have seen a number of cases where this has happened. It seems most likely that this is cancer, involving structures both above and below the diaphragm. I am inclined to place the primary involvement below the diaphragm with metastases to the lung although the reverse may be the case.

DR. R. S. FLINN: In an individual past middle age the rather sudden appearance of dyspnea or hemoptysis, especially accompanied by chest pains suggests new growth of the lung. This individual had dyspnea and hemoptysis but there is no record of chest pains. Pleurisy with effusion and x-ray evidence of a mass involving the left lung root, with narrowing of the left bronchus nevertheless makes such a diagnosis justifiable.

With a history of chronic cough and x-ray evidence of healed apical tuberculosis one must seriously consider pulmonary tuberculosis. The history of the present illness, and the lack of typical x-ray findings and of tubercle bacilli in the sputum make such a diagnosis unlikely. It is conceivable that a large tuberculoma near the left lung root caused his symptoms.

It is also conceivable that he may have had a localized lung abscess but the location of the tumor and the absence of large quantities of fetid sputum are against this.

One must not fail to mention fungus infection and actinomycosis. In view of the numerous sputum examinations it is reasonable to suppose that this possibility was considered and eliminated.

An aneurysm of the aorta might account for this patient's condition, but the lack of pulsating tumor, the negative Wassermann and the clinical course of the disease leads one against such a diagnosis.

A localized bronchiectatic process should also be

mentioned but there is little in the history or physical findings to suggest such a possibility.

Although Hodgkin's disease is usually mentioned in a differential diagnosis of intra-thoracic tumors, the presence of enlarged superficial lymph nodes usually makes such a diagnosis apparent. However, it must not be forgotten that in the mediastinal type of Hodgkin's disease in which mediastinal nodes are especially involved, enlargement of other lymph nodes is usually lacking. Indeed a patient may have all the symptoms and signs of mediastinal tumor—cough, dyspnea, pain and evidence of pressure—but without enlargement of superficial lymph nodes, diagnosis of Hodgkin's disease is almost impossible. This type of Hodgkin's disease is so comparatively rare as compared with carcinoma of the lung that I do not feel that we are justified in accepting this as the cause for the patient's condition.

How are we to account for the abdominal symptoms which became so prominent as to require ileostomy? If this patient is suffering from an intrathoracic tumor, carcinomatous in type, we may explain the abdominal symptoms on the basis of a metastasis to the gastro-intestinal tract. In a similar way Hodgkin's disease may be confined more or less exclusively to the thoracic and abdominal lymph nodes and may produce varied and often indefinite symptoms, such as abdominal pains, jaundice, and effusion into the abdominal cavity.

It is my impression that this individual had carcinoma of the lungs with metastasis to the gastro-intestinal tract.

DR. PRESTON BROWN: The symptoms pertain to the respiratory and gastrointestinal symptoms in a man of 57 whose history dates back 18 years to an attack of lobar pneumonia; he had chronic bronchitis six years ago. X-ray shows an inactive pulmonary tuberculosis. Four years ago he had a coronary occlusion with recovery. Six months before admission he had gall stones with jaundice and clay-colored stools; his final illness of three months began with hemoptysis, continuing until his admission. He had dyspnea, weakness, loss of weight, and after admission to the hospital death as a result of intestinal obstruction. The likely possibilities include pulmonary and miliary tuberculosis, primary carcinoma of the bronchus with metastases to the abdominal organs, primary carcinoma of the gastrointestinal tract with metastases to the lungs and malignant lymphoma with tumors in the thorax and abdomen.

The patient's tuberculosis had been inactive for many years; the x-ray picture did not suggest active pulmonary tuberculosis; and fever played a small part in his illness until the very end. The outline of the tumor in the film suggests malignancy either primary or metastatic. Primary carcinoma of the bronchus is rare and abdominal metastasis of the same producing intestinal obstruction would be even more rare. I am therefore inclined to the opinion that this man had a gastrointestinal carcinoma probably in the large

bowel which was silent for several months; such is not infrequent.

The jaundice and pain which the patient had six months previous cannot be fitted into any of these pictures. A malignant tumor or carcinoma at the head of the pancreas usually produces painful jaundice which is unremitting and does not go away as in this case. This I believe represents the passage of a stone through the common bile duct and is not related to the final illness. My diagnosis, therefore, is carcinoma of the colon with pulmonary metastases and intestinal obstruction with gallstones.

(Concluded next month)

NEW MEXICO MEDICAL SOCIETY HOSPITAL COMPLETION SEEN IN NINE MONTHS

Governor Clyde Tingley of New Mexico, announced recently that all preliminary negotiations for the Hot Springs Crippled Children's Hospital of Hot Springs, N. M., have been completed. Architects' plans and application for funds have been approved.

The Governor's statement came as festivities opened for the hospital celebration climaxed with a banquet and dance at which Governor and Mrs. Tingley headed a long list of honored guests. The program, broadcast over KOB, Albuquerque, and over KTSM, El Paso, was opened at 11 a. m. with a parade led by the State College band of Las Cruces, and followed by a barbecue luncheon. Ground was officially broken by Mrs. Tingley.

The Governor stated: New Mexico will have as fine a hospital for the treatment of crippled children as there is in the country. Cost of construction will be about \$300,000 and equipment about \$100,000. Other expenses such as the consulting architect's fee, cost of shipping materials, and fees for consulting physicians in connection with equipping the hospital, will have to be financed by the state. New Mexicans have helped liberally. Anything given to the foundation can be put to beneficial use. Work will start immediately, and 200 to 250 men will be employed. The hospital will be modern and equipped in the most approved scientific manner. It will have 84 beds, four 10-bed wards, 24 single rooms, six double rooms and two four-bed wards. The dining room will have a capacity of 100, designed with a stage at one end and motion picture projection room at the other. Plans call for an additional 32-bed wing if sufficient money is available.

The hospital will have its own laundry and a central heating plant. The administration, reception, and recreation rooms and sun porches will be around a patio with the hospital units in the wings. There will be numerous terraces and porches for sun baths, two class rooms, occupational, and therapy rooms and operating unit with two operating rooms and auxiliary rooms and infirmary unit. A large outdoor swimming pool enclosed on four sides without a roof will be connected with an enclosed treatment pool. Tub, rest,

and physio-therapy, plaster cast and x-ray rooms, out-buildings for brace making, carpenter and electrical shop and residence for the medical director are to be of Spanish colonial architecture. The buildings will be one-story except for the administration wing where the second story will be given over to rooms for nurses and apartments for doctors and officials. The entire first floor of the hospital will be on a level without stairs so that the children may make their way about in wheel chairs. W. C. Krueger, W.P.A. architect, designed the building, with Henry Toombs as consultant. Mr. Toombs designed the Warm Springs Foundation Hospital.

Gov. Tingley expressed his appreciation for the help given by individuals and Government agencies in making possible the hospital and expressed his thanks to the people of Hot Springs for their help in providing the site.

Minutes of the Grant County Medical Society, (Reported by Dr. B. A. Johnson, Sec., January 31, 1936, the Society convened for a dinner in Silver City, N. M., at 7:00 p.m. with 15 members and guests present. After the dinner, the president, Dr. Russel C. Lane, called the meeting to order. Minutes of the previous meeting were read and approved. The report of the treasurer for the past year was read and accepted.

The following members were nominated and July elected to serve as the officers for the following year:

President—Dr. R. C. Lane, Silver City, N. M.
Vice-pres.—Dr. A. H. Mann, Silver City, N. M.
Sec'y-treas.—Dr. B. A. Johnson, Santa Rita, N. M.

Delegate to State Society—Dr. N. D. Frazin, Silver City, N. M.

Alternate delegate—Dr. David Kramer, Silver City, N. M.

Member of Board of Censors—Dr. David Kramer, Silver City, N. M.

The following clinical program was presented:
Drs. Frazin and Lane reported an encapsulated tumor of the lung in a patient with a four plus Wassermann; the tumor disappeared after several weeks of treatment with mercurous iodides.

Dr. Frazin presented x-ray plates together with clinical history of a tuberculous infection of the metatarsal bone of the foot. A generous discussion of the therapeutics of this condition followed. Opinions were divided as to whether surgical treatment or conservative immobilization was the choice treatment.

Dr. Colvard of Deming, N. M., presented a case history of an adult who had typhoid fever three months ago, from which he recovered and returned to work. About a week ago, he began having temperature, with chills, enlarged spleen, tenderness over the gall bladder, malaise, negative urine. Suggested diagnoses: Focus of infection in the gall bladder, malaria, (patient has been on quinine for several days), Malta fever, abscess of liver, etc. This case was liberally discussed.

Dr. McCreary presented a case of an abscess following anti-luetic injection, following which there was a high temperature of a few days' duration. After drainage of abscess and subsequent recovery, the blood Wassermann was negative. Suggested that the temperature may have been the cause of the good results.

Dr. Parker, district health officer, reported a case of scarlet fever, who was having his third attack of the disease.

After a few medical anecdotes related by Drs. Mann and Colvard, the Society adjourned at 9:45 P. M.



ARIZONA STATE MEDICAL ASSOCIATION



C. R. K. Swetnam, President
D. F. Harbridge, Secretary

THE MEDICAL QUARTER HOUR

The Medical Quarter Hour, a series of 13 weekly dramatic broadcasts, beginning February 5 and closing with April 29, is now on the air over Station KTAR, Wednesdays at 9:30 p.m. The broadcast is sponsored by three Phoenix pharmacies who generously turned the time over to the State Medical Association.

Dr. Robert S. Flinn, radio chairman, Professional building, Phoenix, will appreciate hearing from members of the profession relative to their impressions of the broadcasts. The majority of those taking part in the broadcasts have had either stage or radio experience resulting in a favorable reception of the program by the public. Certain high schools have requested copies of the broadcasts to use with their classes in science.

The schedule for the series is:

General Subject: Family Health.

No. 1. February 5—"The Doctor."

No. 2. February 12—"The Doctor of Today and the Physician of Tomorrow."

No. 3. February 19—"Choosing a Doctor."

No. 4. February 26—"Modern Trends in Child Health."

No. 5. March 4—"Modern Health Hazards."

No. 6. March 11—"Food in Relation to Health."

No. 7. March 18—"The Art of Being Sick."

No. 8. March 25—"Sanitation Goes Modern."

No. 9. April 1—"Care of the Indigent."

No. 10. April 8—"What is State Medicine?"

No. 11. April 15—"The Family Medicine Chest."

No. 12. April 22—"Modern Medical Facilities."

No. 13. April 29—"Let's All Keep Well."

OF PROFESSIONAL INTEREST

"The Ascent of the Medical Profession" is the title of a timely article in the *Journal of American Medical Association* for January 25, 1936, page 297, which article each member of the Arizona Medical Association is urged to study and consider. The authors, Doctors B. R. Shurly and E. S. Bullock of Detroit, take exception to an article in Harper's for November, 1935, entitled "The Decline of the Professions," which is one of many treatises in magazines of nation-wide distribution and is a part, it would seem, of a general scheme to place the medical profession in a poor light with the public.

"The Ascent of the Medical Profession" is deserving of a wide publicity and it is urged that the

members of the profession in Arizona not only read the article but find some means of giving it publicity.

The American Medical Association has issued the official call for the eighty-seventh annual session to be held in Kansas City, Missouri, from Monday, May 11 to Friday, May 15, 1936. The House of Delegates, in which Arizona is entitled to one representative, will convene on Monday, May 11. The general meeting, to which all members of the Association are eligible, will open Tuesday morning, May 12, and continue throughout the remainder of the session. With the annual meeting of the Association within convenient traveling distance of Arizona, it is hoped that a large delegation of members from the state will attend the convention this year.

ROSTER OF COUNTY SOCIETY OFFICERS

The following is a complete list of the presidents and secretaries as elected by each of the County Societies for the current year:

COCHISE:

President, Dr. C. H. Hunt, Bisbee
Secretary, Dr. O. B. Moon, Bisbee

COCONINO:

President, Dr. M. G. Fronske, Flagstaff
Secretary, Dr. Chas. W. Sechrist, Flagstaff

GILA:

President, Dr. Nelson D. Brayton, Miami
Secretary, Dr. Cyril M. Cron, Miami

GRAHAM:

President, Dr. Owen P. Heninger, Safford
Secretary, Dr. J. W. Morris, Safford

GREENLEE:

President, Dr. E. J. Gungle, Clifton
Secretary, Dr. Hal W. Rice, Morenci

MARICOPA:

President, Dr. Guy C. French, Phoenix
Secretary, Dr. H. D. Ketcherside, Phoenix

MOHAVE:

President, Dr. J. L. Barritte, Oatman
Secretary Dr. Walter Brazie, Kingman

NAVAJO-APACHE:

President, Dr. Paul D. Sprankle, Winslow
Secretary, Dr. Alvin Kirmse, Tucson

SANTA CRUZ:

President, Dr. F. T. Hogeland, Cananea, Sonora, Mexico
Secretary, Dr. Charles S. Smith, Nogales

YAVAPAI:

President, Dr. E. A. Born, Prescott
Secretary, Dr. C. E. Yount, Prescott

YUMA:

President, Dr. Charles Powell, Yuma
Secretary, Dr. W. C. Cain, Yuma

COUNTY SOCIETIES

MARICOPA COUNTY MEDICAL SOCIETY

The following officers were elected by the Maricopa County Medical Society to serve for the year 1936:

President, Guy C. French, Phoenix
 Secretary, H. D. Ketcherside, Phoenix
 Vice-President, Leslie R. Kober, Phoenix
 Board of Censors, F. T. Fahlen
 Board of Directors, W. S. Sharp, Kimball Banister.

Library Board, F. C. Jordan, Howell Randolph
 Committees named: Program, Chairman, Preston Brown, H. J. McKeown and C. C. Craig; Public Welfare, Chairman, Howell Randolph, G. C. Truman, H. R. Carson, H. L. Franklin, N. A. Ross. Medical Economics, Chairman, R. J. Stroud, J. D. Hamer, L. R. Kober, M. I. Leff; Auxiliary, Chairman, J. W. Pennington, T. W. Woodman, F. G. Holmes; Membership, Chairman, J. H. Patterson, Wm. F. Schoffman, George Thorngate.

New Members. At the regular meeting of the Society held on February 3, Doctors Charles E. Borah, O. C. West, and J. R. Moore were added to the membership. Dr. Borah has recently joined his father, Dr. J. L. Borah, well known dentist, in the practice of oral surgery. Dr. J. R. Moore, superintendent of the State Hospital, formerly a member of the Yavapai society, has affiliated himself with the Maricopa group as his residence is now in this county. Dr. O. C. West, recently returned from several years in China, is now affiliated with the staff of the Maricopa County Health Department.

REGULAR MEETING

The regular meeting for March was preceded by a dinner held at Hotel Westward Ho, with a majority of the membership in attendance. The following scientific program was given at the conclusion of the social hour:

1. "Non-convulsive Toxemia of Pregnancy," by Dr. Dudley Fournier.
2. "Modern Aspects of Treatment of Eclampsia," by Dr. Benjamin Herzberg.
3. "Hormone Therapy in Gynecology," by Dr. Clarence B. Warrenburg.

The following diagnostic report elicited much amusement and applause recently at the Phoenix Clinical Club, and added something of humor to the usual discussions:

A DIAGNOSIS OF TRICHINOSIS

by Preston Brown, M.D.

We have here a Wop both sturdy and strong
 Whose non-fatal illness was decidedly long.
 One day he had pork chops cooked rare by his wife.
 By eating the same, he nigh lost his life.
 Trichina spiralis entered his gut,
 They set up housekeeping and started to rut.
 The little ones migrated into his blood,
 Poor Tony vomited, but it did him no good.
 But then he felt better while the larvae spread
 To his muscles and diaphragm but not to his head,

And there they set up a severe inflammation
 All the symptoms typical of this infestation.
 The increase of "eosins" is clearly described;
 To this diagnosis I have surely arrived:
 The lung complications are found, oh alack,
 To postpone the recovery of this poor boot-black
 And since he recovered though the case is proved,
 I'm sure that a biopsy the Docs did remove.
 Like Shylock of old, they seized on some flesh
 'Tween the striped muscle fibres found the causative wretch.

So what is the moral, my friends good and true?
 Never eat pig 'till it's cooked through and through.

GREENLEE COUNTY SOCIETY NEWS

The monthly meetings of Greenlee County Medical Society are held on the first Tuesday of each month. Dr. E. J. Gungle of Clifton is president of the Society and Dr. Hal W. Rice of Morenci, secretary.

The Greenlee County medical men have secured space in the county newspaper for notice regarding the MEDICAL QUARTER HOUR, coming over Station KTAR each Wednesday at 9:30 P.M. This is a forward step and will serve in keeping the local public informed on any and all programs given by the profession.

NEWS ITEMS

The Pima County Hospital is having a new wing. The work is being done by the W.P.A. Nearly 8,000 square feet of floor space will be in the new addition. A warm pool for infantile paralysis victims is planned.

A Community health center has been established at Willcox, Arizona, under the administration of a nurse. This is part of the W. P. A. program.

C. W. Sult, Jr., M.D., son of Dr. and Mrs. Charles W. Sult of Phoenix has been appointed interne in Los Angeles County General Hospital taking his position about the first of July.

Dr. and Mrs. A. E. Cruthirds of Phoenix spent a short vacation in California during January.

Dr. Bernard Lee Melton and Miss Marie Rhea Linsenmeyer of Phoenix motored to Tucson during February and were married, returning after a few days to establish a home in Phoenix.

Dr. F. C. Goodwin, Wallace Perry and Mrs. A. F. Quissenberry of El Paso spoke at the banquet in Hot Springs when announcement of completed plans of the New Mexico State Hospital for Crippled Children was made.

Dr. W. R. Jamieson spoke on "Military Medicine" at the meeting of the Woman's Auxiliary to the El Paso County Medical Society in the home of Dr. and Mrs. Paul McChesney at 401 Robinson Blvd. The assisting hostesses were: Mesdames W. W. Britton, W. R. Jamieson, Branch Craig, John W. Tappan, I. J. Bush, A. H. Butler, W. R. Curtis, Gerald H. Jordan, J. W. Laws, J. L. Murphy, Herbert Stevenson, Walter Stevenson, James A. Pickett, and F. P. Schuster.

Dr. Edgar H. Brown, orthopedist of Phoenix, has his offices at his home, instead of at the Professional Bldg., where he formerly had them.

Dr. Meldrum K. Wylder of Albuquerque, New Mexico, passed the examination given by the American Board of Pediatrics and has been certified by them as a licentiate of the American Board of Pediatrics, according to an announcement in the American Journal of Pediatrics.

Dr. Brick Pomeroy Storts of Tucson is now a li-

centiate of the American Board of Pediatricians, having taken the examination November 19th and 20th, 1935, in St. Louis. Of 31 men who took the examination only 25 passed.

Dr. J. W. Taylor, wife and two children, formerly of Ohio, have arrived in Fort Sumner, New Mexico. The Doctor is to be associated with Dr. A. F. Brown.

Dr. C. C. Craig of Phoenix was called East during February to the death bed of his father, Dr. R. H. Craig, who had been ill for two weeks. His father was a native of Charleston and had practiced there 36 years.

Dr. Geoffrey Morris, director of the Gila County Public Health Unit, died of pneumonia at the Gila County hospital, February 25th.

Dr. Joseph D. Vertin, Phoenix, was found dead under a tree on the desert about 200 yards north of the Arizona canal and 100 yards east of 16th street on the morning of February 24th. Dr. Vertin had not been in good health for years. We are informed that he had strolled out on the desert and probably had been stricken suddenly with a heart attack. Dr. Vertin had been a resident of Phoenix for a number of years, but during the last year or so had been physician for a C.C.C. camp. He returned to Phoenix, only recently.

Dr. C. R. Swackhamer of Superior, Arizona, member of the Board of Managers of Southwestern Medicine, called upon the editor and made a few helpful criticisms and suggestions about the magazine. He is always interested in the welfare of organized medicine.

The Arizona Public Health Department under the guidance of Dr. George C. Truman is expanding with the idea of taking advantage of the provisions of the security legislation.

Charles Stewart Mott, Vice President of General Motors Corporation, Flint, Michigan, and Mrs. Mott, the former Ruth Rawlings of El Paso, are the parents of a daughter, Susan Elizabeth, born February 13, 1936 at 11:30 A. M. at Providence Hospital. The baby weighed seven pounds and two ounces. Mrs. Mott was attended by her father, Dr. Junius A. Rawlings, her brother, Dr. Mott Rawlings, and by Dr. Erich Spier. The baby was named Susan for Mr. Mott's grandmother, the late Susan Turnbull Stewart, and for Mrs. Mott's aunt, Elizabeth Rawlings.

A daughter was born to Dr. and Mrs. Erich Spier on Sunday, February the 16th at the Providence Hospital, weighing about four lbs. This is their second child; the first is a boy of three years. The child is gaining weight and doing nicely in the incubator at Hotel Dieu Hospital.

SOUTHWESTERN MEDICAL ASSOCIATION

The Executive Committee of the Southwestern Medical Association announces the Program Committee for the 1936 Meeting and Clinical Conference.

Program Committee, chairman—Dr. E. W. Rheinheimer, El Paso.

Scientific Exhibits—Dr. L. O. Dutton, El Paso.

Commercial Exhibits—Dr. Robert B. Hoffman, Jr., El Paso.

Dr. E. W. Rheinheimer has appointed the following committees:

Clinics—Dr. F. O. Barrett, El Paso.

Advisory Program Committee: Drs., Meade Clyne, Tucson, Arizona, E. J. Cummins, El Paso, Fred B. Evans, Alamogordo, N. Mex., F. T. Hogeland, Cananea, Sonora, Mexico, John D. Lamon, Jr., Albuquerque, N. Mex., Howell Randolph, Phoenix, Arizona, S. A. Schuster, El Paso.

Dr. L. O. Dutton plans to obtain national exhibits but desires exhibits from members of the Association.

BOOK REVIEWS

The 1935 Year Book of General Medicine, Edited by George F. Dick, M.D., Lawrason Brown, M.D., George R. Munn, M.D., S.D., F.R.C.P., William B. Castle, M.D., A.M., William D. Stroud, M.D., and George B. Eusterman, M.D.; The Year Book Publishers, Inc., 304 So. Dearborn St., Chicago.

An extensive review of these Year Books is unnecessary. By reading them one is assured that he has not missed the important advances of the year. For example, on page 615 and several pages thereafter are discussed the influences of thyroidectomy upon heart disease; if one wishes to know about the latest advances in electrocardiography or rheumatic heart disease, he will find it here, etc., etc. The book is highly recommended to those who do not have access to the extensive authentic medical literature.

The 1935 Year Book of General Surgery, Edited by Evarts A. Graham, A.B., M.D., Prof. of Surgery, Washington University School of Medicine; Surgeon-in-Chief of the Barnes Hospital and of the Children's Hospital, St. Louis; The Year Book Publishers, Inc., 304 So. Dearborn St., Chicago.

This book is to surgery what the 1935 Year Book of General Medicine is to general medicine. The Year Books have been so well and favorably known in the past that little need be said about this volume. It is almost indispensable to those who are not in contact with the extensive medical literature of today.

Annual Report of the Surgeon General of the Public Health Service of the United States for the Fiscal Year 1935; Treasury Department Document No. 3073, Public Health Service; United States Government Printing Office, Washington, D. C.; 1935; Cloth; 75c.

This is a small book of 158 pages with an index giving the report of the Public Health Service of the United States for 1935. There is a great deal of data and interesting information in this report. A picture of the buildings of the Lexington Narcotic Farm is shown; it gives a description of the work already begun there. The divisions of farm and insular quarantine and immigration have a most interesting report well worth reading.

LETTER RECEIVED BY A PHOENIX DRUGGIST

Please if possible for you fine cut name of Prof. Dr. in your State he is cure with Snakes Medicines. like Hoemorroids maild Bronchitis. few years ago I did read some about it. now Remain with Respectfully.

PROGRAM

Arizona State Medical Association --- Nogales, April 23, 24, 25

HEADQUARTERS

Hotel Montezuma

MEETING PLACE

U. S. Government Camp, North Grand Avenue

INVOCATION

Rev. O. A. Smith

ADDRESSES OF WELCOME

ANDREW BETTWY, Mayor, City of Nogales

DR. F. T. HOGELAND, President, Santa Cruz County Medical Society

ENTERTAINMENT FOR MEN

Thursday, April 23rd

- 12:15 P.M. Luncheon
- 5 to 6 P.M. Social Hour, Hotel Montezuma.
- 5:00 P.M. Cock Fights, Aztec Club, Nogales, Sonora,
- 7:00 P.M. Smoker and many entertainment features

Friday, April 24th

- 12:15 P.M. Luncheon
- 5 to 6 P.M. Social Hour, Hotel Montezuma.
- 7:00 P.M. Annual Banquet and President's Ball, Cavern Cafe, Nogales, Sonora, Mexico; many entertainment features, and the raffling of many useful and beautiful prizes.

Saturday, April 25th

The International Golf Course will be open to all doctors during the convention and you are urged to enjoy your golf-game as often as you wish. Your badge will admit you.

- 5:00 P.M. Special excursion to Guaymas (Old Mexico) leaves Nogales.

LADIES' ENTERTAINMENT

Thursday, April 23rd

- Registration
- 11:00 A.M. Executive Board Meeting
- 1:00 P.M. Luncheon
- 3:00 P.M. Sight-seeing trip to all points of interest in Ambos Nogales.
- 5 to 6 P.M. Social Hour, Hotel Montezuma.
- 7:30 P.M. Banquet, Cavern Cafe, Nogales, Sonora, Mexico, followed by many entertainment features.

Friday, April 24th

- Registration
- 9:30 A.M. General Business Session
- 10:00 A.M. Visit to Scientific and Commercial Exhibits.
- 11:00 A.M. Annual meeting of the Arizona State Medical Auxiliary. Address by Dr. Isaac H. Jones, "Medical Aviation."
- 1:00 P.M. Luncheon
- 2:30 P.M. Business Meeting
- 5 to 6 P.M. Social Hour, Hotel Montezuma.
- 7:00 P.M. Annual Banquet and President's Ball, Cavern Cafe, Nogales, Sonora, Mexico; many entertainment features, and the raffling of many useful and beautiful prizes.

Saturday, April 25th

The International Golf Course will be open to all ladies during the convention, and you are urged to enjoy your golf-game as often as you wish. Your badge will admit you.

- 5:00 P.M. Special excursion to Guaymas (Old Mexico) leaves Nogales.

Eye, Ear, Nose and Throat Specialists, Take Notice: Dr. Roderic O'Connor, arriving in Nogales Wednesday, April 22nd, is desirous of having several **squint cases** for operation. Any one furnishing a case will be permitted to assist Dr. O'Connor. Cases should arrive in Nogales not later than noon, April 22nd, and report at the office of Dr. Charles S. Smith, where Dr. O'Connor will make his examinations. There will be no charge for the op-

eration, and the hospital expense should not exceed \$15.00. Operations will be performed Thursday, April 23rd. Those having cases are requested to communicate with Dr. Charles S. Smith, Nogales, Arizona.

Mr. George W. Spratt and Mr. Leonard Manes of the **George W. Spratt Optical Co., Los Angeles**, and Mr. Roy Ryan and Mr. William Ackerman of the **Superior Optical Co., Los Angeles**, will be at the meeting of the Arizona State Medical Association and will run the motion pictures, slides, etc., for the speakers, without charge, furnishing the machines and screens.

MANY USEFUL PRIZES

When you register—both men and women—be certain to obtain your "commercial exhibitor's card." Take this card to each exhibit, obtain the signature of the representative, drop the card in the box at the registration booth and become eligible for the raffle of several beautiful and useful gifts. The raffle will take place at the banquet, Friday night, April 24th. Your presence at the banquet is absolutely essential in order to participate in the raffle. Gifts have been donated by the following firms:

- A. S. Aloe Company—a \$25.00 Physician's Bag.
- General Electric X-Ray Corporation—a \$40.00 Hot-point electric mixing outfit.
- Southwestern Surgical Supply Company—a beautiful pair of Health-O-Meter bathroom scales.
- Spicer and Company—a 40-cc. vial of edwenil, and a copy of the book entitled "Endotoxic Infections and Their Control with Edwenil."
- Philip Morris and Co., Ltd.—Two cartons Philip Morris cigarettes.
- The Harrower Laboratory—A package containing three of their more recent products, correlin, endothyrin drops and endophrin inhalant.
- Cavana Cigar Company—A box of cavana cigars.
- Bristol-Meyers Co.—A dozen packages of Ipana toothpaste.
- Cutter Laboratories—\$25.00 merchandise order.
- American Optical Company—a beautiful \$50.00 pair of binoculars.
- Kelly's Prescription Shop and Arizona Brace Shop—A nice Cutex and maplewood set.
- The Cavern Cafe and Bar—a beautiful hand-woven Mexican serape.
- The American Chicle Company through the kindness of Mr. H. W. Schaaf of Phoenix will keep the ladies and doctors supplied with plenty of their fine flavored gum during the meeting.

COMMERCIAL EXHIBITS

Philip Morris and Co., Ltd., Inc., N. Y. City, manufacturers of Philip Morris Cigarettes, has been studying the effects of smoking on the mucous membrane of the upper respiratory tract. In the booth Dr. L. B. Troxler, a member of the research staff, will explain the work and results obtained. Cigarettes will be distributed and furnished for all social functions during the convention.

Spicer and Company, Glendale, Calif., will feature edwenil, a polyvalent antibacterial agent for various endotoxic infections such as the respiratory diseases, boils, measles etc. This is a stable, colloidal, protein-free (by Biuret Test) for intramuscular injection, and raises resistance to endotoxic infections without causing detrimental reactions, either local or general. Full information will be available at the booth. This firm has offices in New York, Chicago, Dallas, Texas and Portland, Oregon—Dr. H. E. Kirschner in charge.

The Harrower Laboratory, Inc., Glendale, Calif., will feature high-quality endocrine products—effective pluri-glandular formulas, and an extensive line of endocrine active principles. Their products are available in sanitabets, capsules, and drops for oral use, and in solution for intramuscular injection—full information available at the booth. The Harrower Laboratory, Inc., has offices in New York, Chicago, Dallas, Texas, and Portland, Oregon—Mr. J. P. Casey in charge.

Southwestern Surgical Supply Company, Phoenix, Arizona, will have on display a full line of surgical and hospital equipment including McKesson Nargraf gas machine, McKesson oxygen tent; McKesson Metabolor; Kelly Koett Portable Shockproof X-ray machine; Lee De Forest, Burdick and Liebel Flarsheim short wave diathermies; Tompkins tonsil suction machine and Davidson pneumothorax machine—Mr. W. B. Robinson in charge.

E. R. Squibb & Sons, New York, N. Y., will display a full line of Squibb products—Mr. H. R. Chowning in charge.

General Electric X-ray Corporation, Chicago and Los Angeles, will display their portable shock proof X-ray equipment, and their new short wave diathermy, known as the inductotherm, and numerous other items of interest to the profession—Mr. Harry Thuresson in charge.

American Optical Company, Los Angeles, will display their 116 ophthalmometer, otoscope, giant ophthalmoscope, May ophthalmoscope, macula retinoscope, transformer, sight-lite unit and meter, ophthalmograph and metronoscope, projecto chart and screen, Robinson-Cohen slide, lensometer and the 589 phoropter—G. J. McLoughlin, C. L. Proctor, J. C. Watts and Stanley Smith in charge.

A. S. Aloe Company, St. Louis and Los Angeles, will display a complete line of surgical instruments and hospital equipment—in charge of Mr. H. H. Hall.

Kelly's Prescription Shop and Arizona Brace Shop, Tucson and Phoenix, Ariz., will display lettering of Kelly's prescription shop and artificial limbs, and several types of orthopedic appliances, including braces, arch supports, various models of surgical garments, supporting belts, trusses and like appliances. Mr. Kelly and Mr. Auger will give practical demonstrations on braces and artificial legs. Mrs. Auger will demonstrate lady's garments and model same if necessary. This exhibit will be unique in that it will give the medical practitioner first-hand information regarding the construction and fitting of the various articles exhibited and the professional pharmacy display of articles used in dispensing.

Stokely Brothers and Company, Oakland, Calif., will display Stokely finest foods, not only for the baby, but the entire family—in charge of Mr. G. C. Pugh.

Mead Johnson and Company, Evansville, Ind., will exhibit a full line of Service and Mead Johnson products, together with a number of interesting and instructive scientific motion pictures—in charge of Mr. D. O. Tigher.

Cutter Laboratories, Berkeley, Calif., will exhibit their complete line of vaccines, antitoxins, and allied specialties—such specialties as pollen extracts for the diagnosis and treatment of hay fever and the Cutter line of liter saffitflasks of dextrose and other solutions for mass intravenous therapy—in charge of Dr. J. P. Jacks.

SCIENTIFIC EXHIBITS

For the 1936 Meeting of the Arizona State Medical Association.

Metropolitan Life Insurance Company, N. Y. City, will exhibit charts showing **cancer deaths** in the U. S., compared with those from other causes, chances at each age of eventually dying from cancer, **chief sites of cancer** in men and women, by age groups, **trend of cancer death rate** by site, by age groups, and **curability of cancer** in certain sites as reported in recent medical literature. A booklet entitled "Progress in Cancer Control" will be distributed.

American Society for the Control of Cancer, N. Y. City, will have an exhibit of **cancer of the uterus and cancer of the skin, with particular reference to melanoma, wax models, histories, charts, etc.** **Moving pictures** and film slides will accompany the exhibit. There will be a **meeting for the laity** during the convention and this picture will be shown and several addresses delivered. This exhibit is through the courtesy of Dr. E. Paine Palmer, Phoenix, Arizona, who has assumed all expense in securing the exhibit.

Arizona State Board of Health, with Phoenix Indian School, reproduces the exhibit given by the Wis-

consin State Plumbing Board during the National Public Health Association meeting in Milwaukee. It has been constructed by the Phoenix Indian School. **Community Sanitation Exhibit** of charts and diagrams of the tendency of various communicable diseases in the state. Materials used in the public health education program of the State Board of Health will be displayed. Mr. O. V. Cooper, Assistant State Director of Community Sanitation and Mr. X. E. Doucette, Secretary of the Arizona State Board of Health will be in charge.

Drs. Glenway W. Nethercut and Thomas D. Allen, Chicago, will have an exhibit entitled "**First Aid in Eye Injuries**" which was displayed in Atlantic City last June at the A. M. A. meeting and should be of particular interest to both ophthalmologists and general practitioners.

Dr. S. H. James, Manager, Veterans Hospital, Tucson, Ariz., will have a photographic exhibit of x-rays showing various lung lesions and results of therapy.

The Wyatt Clinic, Tucson, Ariz., will have a series of charts giving graphic data on arthritis.

American Medical Association, Chicago, will have a small exhibit on **tuberculosis**—especially the cutaneous manifestations—**cutaneous manifestations of syphilis**, prevention of **eye injuries**, **objectionable cosmetics**; **patient medicine and quackery**; **vaccines and serums**; and "**the doctor prevents disease.**"

Dr. Hans Barkan, San Francisco, will show the O'Connor operation by motion picture, a description of which is as follows: "Insertion of speculum with rubber dam to prevent contact of sutures with skin; incision of conjunctiva and uncovering of external rectus tendon; grasping this tendon with the forceps and bringing it up into view; buttonholing conjunctiva; sliding scissors under tendon to hold it in place; removal of fascia of tendon so that tendon fibers are exposed; splitting of tendon, O'Connor splitter, wrapping of B and B dermal medium around and over the tendon splits, then tightening of dermal with consequent shortening of tendon to approximate tissues closely; suturing of conjunctiva, then exposure of internal rectus and myomectomy just behind tendon to reduce strength of internal rectus and obtaining temporary paralysis; then suture. Position of eye under anesthesia will be shown."

Dr. Richard O. Schofield, Boulder City, Nevada, will present a number of films of interesting **fracture cases** at Boulder dam.

Drs. John E. Bacon and William B. Watts, Jr., Miami, Ariz., will present a number of films of interesting cases of **silicosis**.

Drs. Soiland, Costolow and Meland, Los Angeles, will present a number of film transparencies showing various stages of **cancer**, and several **before-and-after treatment series**.

The United States Public Health Service will have an exhibit on **trachoma**. Dr. Paul G. Eilers and Miss Ethel Cunningham of the Service—both highly experienced in trachoma, will be present and will be glad to see any cases of trachoma and discuss them with the attending physicians. If you have a case you wish Dr. Eilers to see, write Dr. Charles S. Smith, Nogales, Arizona, and make the necessary arrangements for presenting your case at the meeting.

Dr. Frank T. Hogeland, Cananea, Sonora, Mexico, will present x-ray films, histories, etc., of **silicosis**.

Pathological Laboratory, Phoenix, Ariz., will exhibit (1) **Configuration and Mensuration of the Heart Shadow**—demonstrating changes in size and shape of the heart produced by various heart lesions; colored films will show the chambers of the heart of the normal silhouette in frontal, lateral and oblique views; the changes in configuration and size produced by various types of heart disease will be shown; methods of measuring the right and left sides will be demonstrated.

(2) **Bone Anomalies of the Spine, Foot and Wrist**—illustrating the dangers of confusing these anomalies with injuries and the difficulty in differentiating them from traumatic lesions.

PARTIAL PROGRAM—Complete Program in next month's Southwestern Medicine.

EL PASO COUNTY MEDICAL SOCIETY

The meeting was called to order at 7:40 P. M. January 27, 1936, by Dr. B. F. Stevens at the Hotel Dieu Nurses' Home. Minutes of the previous meeting were read and approved. Dr. Stephen Schuster arrived and Dr. Stevens relinquished the chair to him.

Dr. W. W. Gay read a paper on "Silicosis" and demonstrated with typical radiograms of silicosis. Discussed by Drs. R. B. Homan, Sr., Egbert, Dutton, Laws, Waite, Gallagher, Schuster and Gay.

Dr. W. R. Jamieson read a paper "Treatment of Gonorrhea," discussed by Drs. Multhauf, Hardwick, Thompson, Curtis, Dutton, Gallagher, Haffner and Jamieson.

Case reports were submitted by Dr. Harris (City-County Hospital Intern); Dr. Waite gave autopsy reports.

A motion was made by Dr. Gallagher that the El Paso County Medical Society request the staff of the City-County Hospital through their Board of Managers to invite the Medical Society to meet there. Motion was seconded by Dr. Multhauf. Motion was passed, 15 voting in favor of the move and 11 against it.

Dr. McCamant made a motion to reduce the dues for the current year from \$18.00 to \$14.00. Motion was seconded by Dr. Marrett and approved, 17 voting in favor of the reduction and seven against it. Meeting adjourned at 9:57 P. M. L. O. Dutton, M. D., Secretary.

Meeting of January 13th.

Dr. Rennick's paper on "Infant Feeding in the First Trimester" was presented.

Discussion: Dr. B. F. Stevens desired to know the role of allergy in the feeding of infants in the first three months.

Dr. Werley stated that he felt that mother's food undoubtedly affects their milk.

Dr. Dutton stated that mother's milk often causes colic in infants and this is best relieved by eliminating from the mother's diet those foods to which she is sensitive.

Dr. Gorman quoted Alvarez as stating that over-cramming with food is one of the most serious mistakes in early infant feeding and that there is today too great a tendency to the use of vegetables early and that too great a gain in body weight of the child is a detriment rather than a help.

Dr. S. Schuster requested Dr. Frank Schuster to discuss some anomalies (congenital) of the oropharynx.

Dr. Frank Schuster stated that among numerous development defects in children such as pyloric spasm, club foot, meingiceal, etc., cleft palate was one that caused great difficulty in infant feeding. He stated that the giving of the mother's milk to such children greatly increases the child's strength and greatly increases the child's chance in his fight for life and that as soon as the child's condition permits it, repair of the left palate should be undertaken. Constant feeding with mother's milk throughout the pre-operative and post-operative period is most essential.

Dr. C. W. Awe asked if a woman with tuberculosis should nurse her child and also asked if it

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Laryngoscope 1935 XLV, 149-154★
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causes a quiescent case to develop into an active one.

Dr. Rennick in closing stated that allergy is not as common a cause of colic as is thought. It is important not to use foods other than milk too soon. All cases of cleft palate should be operated on early. The breakdown of the quiescent tuberculous mother at six weeks is due more to her loss of sleep, continuous anxiety and increased nervousness than it is to the actual breast feeding itself. Stimulation of breast milk by injections is not thought to be of value.

CASE REPORTS: Dr. R. B. Homan, Jr., gave the case report of a woman, age 25, with thoracoplasty, who had a large abscess pointing on her side following each of the three stages, secondary in character, with no tubercle bacilli present and who now has a pocket at the level of the eighth rib with 250 c.c. of pus in it. A liptodol injection distinctly shows a bronchial fistula. Postural drainage has decreased her sputum nearly 100 per cent.

Meeting of January 27th.

First Paper Presented: Silicosis—Its Complications" by Dr. W. W. Gay, Chief Surgeon for the A. S. and R. Dr. Gay presented a most excellent paper in a marvelously condensed form on the subject of silicosis. A topic with which

he has had many years of experience. Numerous chest plates were exhibited, typical of the various stages of silicosis and its complications. (See article on page 89. Ed.).

DISCUSSION: Dr. R. B. Homan, Sr., mentioned the paper as being most excellent and one to which he could add nothing.

Dr. Orville Egbert stated that silicosis was not even an outstanding topic for the public press. He mentioned that asymmetry in the lung picture does sometimes occur. The pleural thickening, so common in silicosis is commonly thought to be due to peripheral lymph drainage.

Dr. L. O. Dutton stated that it had been his privilege to examine the sputum of many cases in which organisms of monilia were a complicating factor. He said that the examinations were repeated many times, so often in fact with all additional laboratory tests, culture plates, etc., that there could be no question as to diagnosis of monilia as a complicating factor in the cases cited. He had noticed himself that iodides greatly improve the cases of moniliasis.

Dr. Laws asked: If cases of silicosis in the first stage are removed from their source of trouble, do they improve or do they get progressively worse.

Dr. Gay answered as follows: Due to the great prevalence of pleural adhesions collapse therapy

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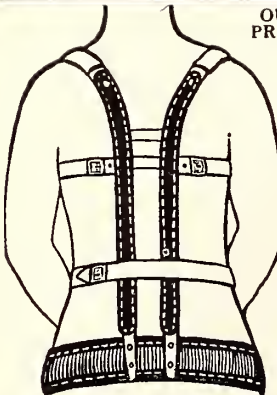
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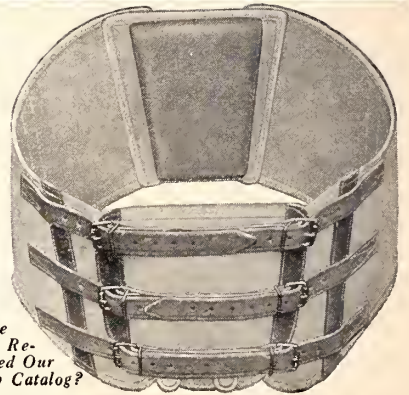
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would be of no avail in silicosis and probably to diminishing the vital capacity of the lungs it would greatly endanger the patient's life. Disability is directly proportional to the amount of inhalation, which is usually dependent on the length of time the men have worked in the mines, though in some cases a man may get enough silica in six months or a year to bring on a severe case of silicosis as is found in others only after 10 to 20 years of work in the mines. It has been shown that it is the very small silica particles—under five microns in diameter—that cause the most damage. It seems as if the human body has a quite remarkable tolerance to silica but that after a certain amount is absorbed, a terrific flare-up in the lungs occurs with tremendous increase in fibrous tissue. This is silicosis. Dr. Gay went on to state that after removal from the dust a patient with first stage of silicosis might show progressive fibrosis for the ensuing 18 months, then all increase in fibrous tissue formation would cease. This is common in about 80 per cent of cases. The other 20 per cent may cease fibrous tissue formation and therefore terminate fatality. In 40 per cent of post mortems performed one year or more after removal of the men from their dust environment, no silica whatsoever could be demonstrated in the lungs. Silicosis by definition is progressive fibrosis of the lungs due to silica.

Dr. W. W. Waite presented a case of a boy who had ceased working at the age of 20 in the mines after some four years of employment there, who showed the further complication of lung abscess

with progressive fibrosis and fatal termination some 10 years after removal from silica.

Dr. Paul Gallagher stated that this talk of Dr. Gay's had particularly and forcibly presented the issue that all cases presenting tuberculosis must be carefully differentiated clinically and with an x-ray plate from silicosis.

Dr. Stephen Schuster asked what preventive measures were helpful.

In his final response Dr. Gay stated that silica particles which do the most damage penetrate even the finest respirators, and that a respirator which will keep out silica particles below five microns in diameter almost prohibits proper breathing. Wet drill is not the solution as the dampness and cold lowers the general health of the man. When blasting occurs with water present very small microscopic droplets of water with silica particles adherent to them are formed which are then carried directly into the air sacs. The best protection is the natural filter of the nose itself, when this wears out silicosis follows. The solution will probably remain with the engineers who must devise methods of removing the dust of mining operations.

Meeting of February 10th.

Meeting was held in the staff room of the Hotel Dieu Nursing Home. In commemoration of the new quarters for crippled children, established at the Masonic Hospital under the auspices of the El Paso Junior League, Dr. Miller has taken motion pictures on 16 mm. film of much of the work that Dr. Goodwin has done there. Various ortho-

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pedic procedures including repair of club feet, of paralyzed legs from poliomyelitis, and striking kyphosis of the spine from Pott's disease were demonstrated. Repair of hare lip and cleft palate was also demonstrated. Probably, the most unusual was the repair of a diaphragmatic hernia in the left half of the diaphragm, which had permitted the entire stomach, spleen and most of the colon and small bowel in the left chest, compressing the left lung above the third rib. This operation was performed by Dr. Miller under cyclo-propane anesthesia. The child made a splendid recovery. A dorsal kyphosis due to Pott's disease was later repaired by Dr. Goodwin.

Dr. Jamieson displayed a three-reel "movie" of the Army Medical Corps in mock maneuvers, demonstrating the latest methods of handling the wounded when combat units are advancing. It was instructive.

Dr. R. B. Homan, Sr., presented a case report of a woman, age 63, who had been diagnosed pulmonary tuberculosis, but in whose copious sputum no tubercle bacilli could be demonstrated. The outstanding symptom was dyspnea—present for at least six years. No antecedent cause for the dyspnea could be made out. There was no cardiac pathology. X-rays revealed several small cavities in the right lung below the clavicle. In the six months prior to her demise she was orthopneic. There was no great loss of weight and x-rays shortly before death showed a marked increase in the mediastinal shadow with heavy white markings in the lower lobes. Autopsy revealed a diffuse bronchiectasis of both lungs with extensive fibrosis throughout and marked pleural thickening. The organisms recovered were streptococci and staphylococci. No fungi or spirochetes were demonstrated.

The other case report of the evening was made by Drs. Goodwin and Waite. A Mexican man, about 40 years of age had been struck in the right side of the head and right shoulder by a heavy rock while working in a mine in November, 1935. The rock glanced from the head and shoulder, struck his right knee and crushed some of the bones of the right foot. The man's complaint was

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pain in the chest and right foot. Prior to death, Feb. 3, 1936, physical signs of the chest were essentially normal. No cause for his recurring pain over the sternum could be found. Autopsy revealed multiple infarctions of both lungs, some old and fibrosed and others recent. A thrombus was discovered in the veins of the right leg just above the ankle. Patient's death was sudden and a thrombus was discovered in the pulmonary vessels which seemingly explained the sudden exodus.

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, Dr. P. H.

Director New Mexico State Bureau of
Public Health

DR. CRAMP RETIRES

The retirement of Dr. Arthur J. Cramp from the directorship of the Bureau of Investigation of the American Medical Association cannot pass without notice in this column. The Association has done no other work of such value to the public health as has been done by the bureau founded by Dr. Cramp and brought by him through 30 years of distinguished service to its present powerful position. Health officers, teachers, editors and many other citizens send inquiries to the Bureau of Investigation every year. No one has ever failed to receive a courteous reply and from the records of more than 200,000 investigations made by the bureau helpful information of the past history of any fraudulent remedy can usually be extracted.

Dr. Cramp may enjoy the relaxation of Florida's climate with a good conscience. And yet we hear rumor that his pen will not stay still; we shall never tire of reading its lively message.

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Following is one of several acknowledgements by colleagues of New Mexico of the arrangements made by the State Bureau of Public Health for purchase at the expense of the New Mexico Relief and Security Authority of remedies for the treatment of indigent syphilitics:

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certain, and by being able to treat her, it will prevent infection being spread to several young men at least, as well as getting her back on her feet. Thanks.

That is the sort of a note that makes a health officer feel good. Of course we believe that we should care just as deeply about the public health even if we were not paid to care for it. But here is a man who gets nothing for his pains thanking me that he has an opportunity to give his services for the public good.

WARNING

The National Medical Association, organization of negro physicians, issues a warning regarding a Reverend Amos H. Carnegie. It seems that some well disposed people who are influenced more readily by sentiment than by logic have entrusted to Mr. Carnegie sums of money for a grandiose project of hospital construction. The slogan is "a negro hospital in every city with a population of ten thousand or more." We have not heard of Mr. Carnegie in the Southwest. It may be that the warning resolution of the National Medical Association, which almost covers two single-spaced typewritten pages, has led him to espouse some other cause.

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6	Dried Milk	Intolerance Allergy Travelling
7	Acid Milk	Marasmus Diarrhea Celiac Disease
8	Protein Milk	Diarrhea Celiac Disease
9	Butter-Flour Mixture	Marasmus
10	Goat's Milk	Allergy

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REFERENCES:

- Kugelmass, Clinical Nutrition in Infancy and Childhood, (Lippincott).
Marriott, Infant Nutrition, (Mosby).
McLean & Fales, Scientific Feeding in Infancy, (Lea & Febiger).

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APRIL, 1936

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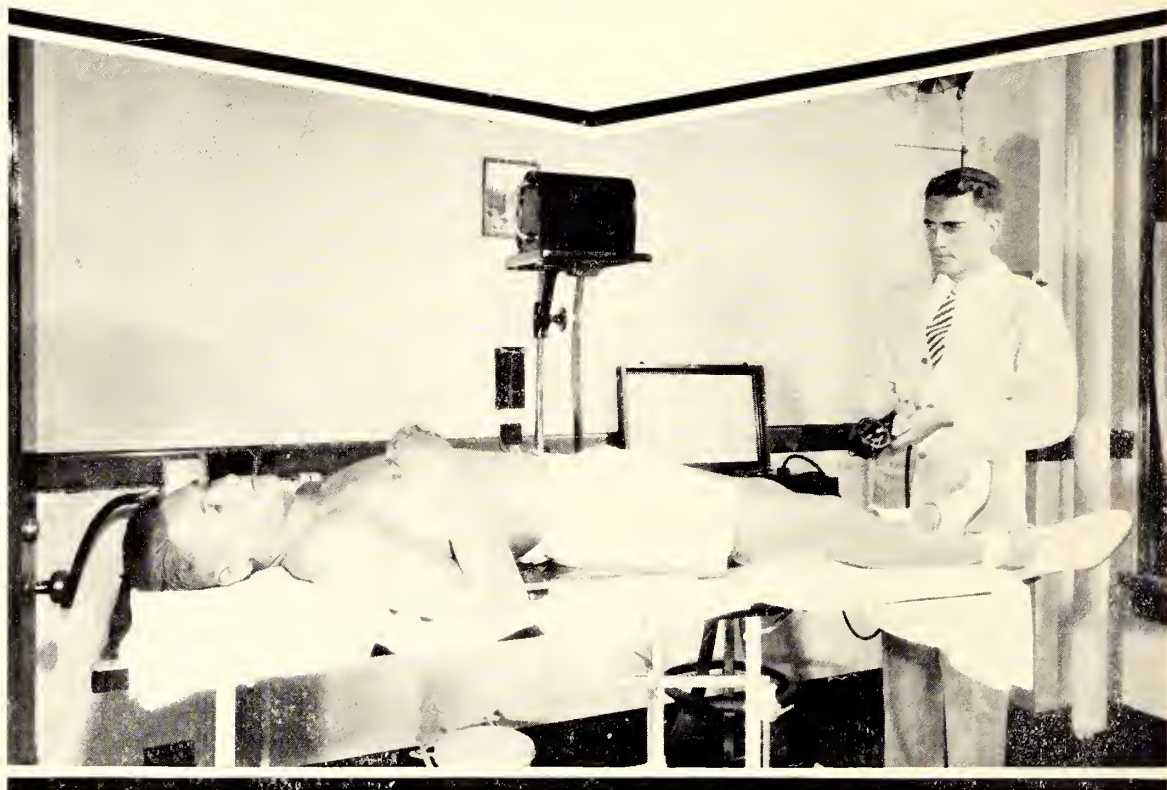
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CANNED FOODS AND THE PUBLIC HEALTH

III. Chemical Preservatives

• Some of our readers have inquired as to whether or not chemical preservatives are used in commercially canned foods. In certain instances, this question was inspired by the fact that "canning compounds" were formerly sold for use in home canning and preserving operations. Such compounds, however, are rarely used by the housewife of today, and never by commercial canners.

We wish to state here that *no preservatives are used in commercially canned foods.*

Spoilage of food is principally caused by the growth and multiplication in food of microorganisms such as yeasts, molds, or certain types of bacteria. These microorganisms depend upon the food they inhabit for their nutrition and their life processes produce changes in the chemical or physical characteristics of food, or both. These changes lead us to state that the food has "spoiled".

Like other living organisms, these spoilage microorganisms can grow and multiply in a food only as long as conditions remain favorable for their existence. If any environmental factor, such as temperature, moisture or acidity, becomes unfavorable, these spoilage organisms are destroyed, or their development is inhibited.

All methods of food preservation have a common underlying principle: they all alter some factor or factors in the food environment so as to render conditions unfavorable

for the growth or development of spoilage organisms in the food.

Thus, foods may be preserved by freezing or refrigeration, which serves to lower the temperature below that optimum for growth of certain spoilage organisms; dried foods keep because the moisture content has been reduced to an unfavorably low level; certain fermented foods keep because of the development of high acidity. All of these methods produce changes in the environment in which the food spoilage organisms must live.

Commercial canning is a method of food preservation in which the temperature factor in the environment is raised to a level above that optimum for growth of spoilage microorganisms. Thus, canned foods keep because in their preparation they are subjected to heat processes in hermetically sealed containers. The thermal processes raise the temperature of the foods to those temperatures at which the most resistant spoilage organisms present cannot grow or survive. (1)

The hermetic seal insures protection against future infection of the food by such organisms.

Thus, commercial canning is a method of food preservation which has for its basis the thermal destruction of spoilage organisms; no chemical preservatives are needed to insure preservation of the foods, and, consequently, none are used.

AMERICAN CAN COMPANY

230 Park Avenue, New York City

(1) The Microbiology of Foods, F. W. Tanner, Twin City Pub. Co., Champaign, Ill., 1932

This is the eleventh in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



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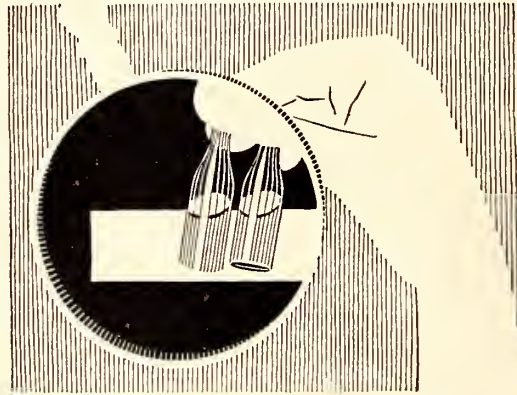
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VOL. XX.

APRIL, 1936

No. 4

ANNUAL SUBSCRIPTION \$2

SINGLE COPIES 25 CENTS

Entered at the Postoffice at Phoenix, Arizona, as second class matter.

"Acceptance for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized March 1, 1921"

URINARY LITHIASIS

H. C. BUMPUS, Jr., M. D.
Pasadena, California

(Presented before Southwestern Medical Association, November, 1935.)

Investigations into the etiology of calculus formation in the urinary tract, description of various ingenious mechanical methods for their eradication, and treatises on the most efficient methods of their diagnosis make up a large portion of urological archives.

That man has suffered from earliest time with urinary calculi is evident by the finding in 1901 of a calculus among the pelvic bones of a 16-year-old boy in a grave in upper Egypt known to antedate the Hebrew Exodus of 1320 B. C. by 3000 years. The oldest renal calculus was discovered six months later by Dr. George A. Reisner of the University of California; he found four renal calculi alongside the first lumbar vertebra in a grave of the second dynastic period.

ETIOLOGY: As when one finds multiple remedies recommended for a disease it is safe to assume that none is of great value, so in the innumerable theories advanced for the formation of stone it is safe to assume that no one theory covers all types. Hippocrates believed that stone formation was due to drinking water rich in lime and tried to prevent it by giving diuretics. Many physicians have not advanced much beyond this idea, for today we find some advising patients to drink only distilled water. Such advice while being without scientific foundation also is apt to be deleterious to the patient, who not being able to obtain distilled water easily or frequently, does not get enough fluid; as a result he excretes a urine of high specific gravity concentrated with urinary salts and apt to precipitate and form stone; were the urine of low specific grav-

ity and less concentration, as it might be if the patient was allowed to drink freely whenever water was available, stone formation might be less likely. Animal experiments have been attempted to show direct relationship between oral ingestion of the common constituents of renal calculi and their formation; none has been successful. The nearest approach has been the feeding of oxamide and the production of oxamide stones, but oxamide (diamido oxalic acid) is not a common article of food and is a crystalloid foreign to the urinary tract. Attempts have been made to demonstrate geographically that in limestone regions calculi are unusually frequent. The opposite has been found to be true, for in certain limestone areas the inhabitants are notably free of stone—as in many parts of England and America.

More suggestive data are obtained from history. In the sixteenth to eighteenth centuries urinary calculi became a veritable scourge. Calculi increased in frequency after every protracted war and diminished when peace was established. In the eighteenth century calculi became common in adults of good positions. Pepys described how he prepared for the operation, and for the remainder of his life carried the stone in his pocket. One, Joanna Stevens, had a quack remedy which Horace Walpole believed cured him, although his post mortem examination showed otherwise. This remedy had such a vogue that in 1739 her recipe was purchased by the state for 5000 pounds in order that its contents might be made public. At the beginning of the last century stones were still common. Of 649 cases in the Norfolk and Norwich Hospitals during 1772 to 1828, 292 were under 14 years of age. In France for the same period, Civiale found more than half (3889 cases out of 5383) occurred before the age of 20.

Stone in childhood in both France and England is now rare, but in India and China still

common. This remarkable change in England and France is attributed to improved living conditions chiefly improved nutrition during childhood.

Scientific investigation has concerned itself chiefly with metabolic perversions and specific infections.

Evidence of the first of these has been demonstrated by Osborn Mendel and Ferry, who by feeding rats a diet deficient in vitamin A were able to produce calcium phosphate stones.

Albright and Bloomberg demonstrated that in 62 per cent of patients with hyperparathyroidism the resulting hypercalcemia and phosphaturia caused stone, so that Barney at the Massachusetts General Hospital by examining the blood of all patients with urinary calculi for hypercalcemia has been able to diagnose hyperparathyroidism in many unsuspected cases.

Crystalloids normally foreign to the urinary tract but excreted therein by metabolic perversions are found clinically as cystin and xanthin stones and are artificially produced by oxamide.

Specific infection as an etiological factor was demonstrated by Rosenow who produced renal stones in animals by chronic foci with an organism showing elective localization for the urinary tract; Hager and Magath produced stones in animal bladders with urea splitting bacteria which are frequently in alkaline urine. Since then these organisms have been isolated from renal stones.

That stones form more readily in stagnant or residual urine has always been noted, and the explanation is that the urine is supersaturated with water insoluble crystalloids held in a state of dispersion by the absorptive power of the colloids. If the colloids for any reason coalesce to form a gel, thus losing their absorptive power, the water insoluble crystalloids precipitate and are enmeshed in the gel.

The coalescence of colloids is known to be favored by an acid urine.

From these facts we may carry on at least intelligently in preventing stone. The individual should be freed of all sources of urinary stagnation such as hydronephrosis, residual bladder urine or ureteral obstruction. If urine is kept at low specific gravity by copious ingestion of fluids, crystalloids will have diffi-

culty in coalescing because of dilution. An acid ash diet insures colloidal dispersion. To combat urea splitting organisms acidifying drugs should be added and if necessary a ketonuria may be produced; Helmholtz has shown that with a pH of 5.5 or below, the concentration of B-oxybutyric acid of 0.5 renders a urine germicidal.

Therefore to prevent stones, drink enough fluids to make the urine always light of color; dark urine likely is a concentrated urine. To advise a patient to drink so many glasses of water without knowledge of the temperature or humidity of the atmosphere in which he lives is ridiculous. A diet largely of acid ash foods, high in vitamin A with enteric coated ammonium chloride tablets will assure an acid urine, and possibly prevent formation of stones.

In the treatment of stones of the urinary tract surgery has the first place and for a time was considered the only means. However, after centuries of unsuccessful attempts to crush stones in the bladder, Bigelow of the Massachusetts General Hospital perfected the lithotrite. Cabot states: "The part which Bigelow actually played in the development of the operation of litholapaxy which properly bears his name has been much misunderstood. By some it is thought that he is the first person to use an evacuator. Neither of these facts is at all correct. The lithotrite had been in common use for more than half a century. Evacuators of various kinds had been tried and discarded. It remained for Bigelow, the mechanical genius, to perfect the details of both the lithotrite and the evacuator so that they became efficient and mechanically correct."

To mean the use of the two instruments, Oliver Wendell Holmes coined the term "litholapaxy." Crushing a stone had been termed "lithotritry;" the fragments were left to the patient to pass more or less successfully always with much pain. Usually lithotritry was repeated before the larger fragments were voided.

LITHOLAPAXY VERSUS CYSTOTOMY: The patient on whom litholapaxy is performed can usually return to his occupation in a few days. Small stones are sometimes removed in the office. The patient has as a souvenir sand and a few small fragments of stone. The patient from whom a stone has been removed by

cystotomy has had 10 days to two weeks in the hospital, with suprapubic drainage. He can show a stone and an incision. He is more likely to consider the surgeon's fee favorably than is the patient who was only slightly incapacitated. This and the ease with which the surgeon can perform cystotomy may explain but not justify the relative infrequency of litholapaxy.

Possibly half the bladder stones should be removed by cystotomy because of complications such as prostatic hypertrophy or lesions of the bladder necessitating surgical procedures; the results of litholapaxy are so much better than removal by cystotomy that it should be done whenever possible.

Contraindications to litholapaxy are as follows: (1) Too large a stone to grasp with the jaw of the lithotrite; (2) a bladder which cannot be dilated sufficiently to give ample room between its walls and the stone for manipulation of the lithotrite; (3) lesions in the bladder such as tumor, diverticulum hypertrophy of the prostate gland, or other obstruction at the vesical orifice which demand cystotomy for correction (slight hypertrophy of the prostate gland should not be considered a contraindication especially when the congestion is due to the stone and mainly responsible for the obstruction; in many of these cases congestion will subside completely following removal of the stone without difficulty in urination; in other cases it may be possible to remove the obstructing tissue later by means of transurethral prostatic resection); (4) the matrix of the stone adhering to the jaws of the lithotrite (such stones usually are formed over portions of soft rubber catheters; the rubber becomes soft and gummy and will not only adhere to the jaws of the lithotrite but may prevent their full closure and hence withdrawal of the instrument; stones with chewing gum or paraffin for a nucleus should be included in this group); (5) stone formed about sharp objects, such as knife blades or hairpins which may puncture the bladder wall during manipulation; (6) stones adherent to the bladder wall—in removal the wall may be torn; and (7) stones formed in diverticuli and having filled it continue to grow in the bladder.

Following removal of bladder stones by litholapaxy urologists centered their attention on ureteral stones. It was in 1904 that Lewis first introduced his instrument for the manipulation

of ureteral stones, since which time many urologists have endeavored to remove ureteral stones by cystoscopic means. Long experience and many reported cases have demonstrated that this is not entirely free of danger, but the technique has now been established, and the prospects for success or failure can be accurately gauged.

A gradual dilation of the ureter by repeated passage of catheters is safer and usually more successful than the attempted removal by a mechanical manipulator. The more recent the origin of the stone, the greater will be the possibility of removal, and of course its size and shape bears a direct ratio to the difficulty of manipulation. Periureteritis following manipulation must be constantly in mind, and if symptoms indicate such immediate ureterostomy is preferable to delay with the possibility of suppurative pyelonephritis.

It is safe to assert that approximately 85 per cent of ureteral stones can be removed by manipulation; but the greatest care must be exercised in selecting cases. Stones low in ureters are easiest—those high most difficult. The opposite is true in surgical removal.

CONGENITAL VALVE OF POSTERIOR URETHRA

(A Case Report)

A. WILLIAM MUTHAUF, M.D., F.A.C.S.
El Paso, Texas

A child, 30 months of age, was taken seriously ill May 14, 1934 with fever and chills, necessitating hospitalization for 10 days; malaria was diagnosed. For the next three months he had slight periodic temperature with a moderate amount of pus in the urine. Under urotropin and sodium acid phosphate, 45 to 55 grains daily, the urine cleared. He then had a severe upper respiratory infection and another seizure of fever and chills.

A urological investigation on February 15, 1935 gave abnormal findings of: Harsh breath sounds over the bronchial tree; pulse rate 112; rectal temperature 103; abdomen uniformly distended with much gurgling of gas; bladder above the symphysis; marked inguinal adenitis on right side; recent vaccination on right thigh still inflamed; and exaggerated knee jerks.

Cystograms disclose: Marked dilation of the bladder, ureters and kidney; ureters tortuous; kidneys greatly enlarged with destruction of parenchyma; and funnelling of vesical neck—on one cystogram.

The mother says the child voided more urine following instrumentation than it did before.

An infant cystoscope passed under anesthesia on February 26 revealed: Residual urine 780 c.c.; bladder mildly inflamed; ureteral orifices in normal position—gaping; vesical neck slightly relaxed but with definite sphincter action; small irregular ridge just within the internal sphincter extending forward to near the veru montanum; remnant of a congenital valve destroyed by instrumentation; and fine trabeculations of musculature like neurologic bladder.

The laboratory findings were:—On December 26—hemoglobin 85 per cent, erythrocytes 4,000,000, blood urea 60; few leucocytes of urine from each kidney and from bladder; urine cultures negative; December 29—albumin and innumerable pus cells of urine; January 12—faint trace of globulin, three cells and negative Wassermann up to one c.c. of spinal fluid; March 14—P.S.P. in first 30 minutes 2.5 per cent, in second 30 minutes 0.5 per cent, and third 30 minutes 10 per cent.

When I first saw the child he was being catheterized every eight hours. I instituted retention and his temperature soon fell to normal

and his general health improved. Several pieces of tissue were removed from the vesical neck with a baby punch, leaving the vesical neck wide open. Catheter was left in the bladder for several days; and a ketogenic diet was given. On removal of catheter, voiding was easy; residual urine seven days after surgery was—between two and a half and three ounces—that still remaining in the widely dilated ureters.

My first impression that this might be from a neurologic state, was abandoned because of the absence of changes in reflexes or in sensations. With extreme retention, secondary atony and thinning of the musculature it appeared like a neurologic or "cord bladder." The detrusor muscle undergoes hypertrophy as obstruction in the vesical neck progresses. The patient voids freely although residual urine in small amounts is present. When decompensation of the detrusor muscle occurs an atony of the muscle can develop with a tremendous increase in the residual urine.

Residual urine determinations have been carried on for the past several months and the amount has gradually decreased to where only from 10 to 12 c.c. are residual. Kidney function test at present is 38 per cent for the first hour and 22 for the second. Blood urea several days ago was 32 mgs. per 100 c.c. of blood.

TREATMENT OF CONGESTIVE HEART FAILURE

CHARLES T. STONE, M.D., F.A.C.P.
Galveston, Texas

When it is recognized that congestive heart failure is the terminal event for at least half of those with structural heart disease, its full seriousness becomes apparent. Congestive heart failure is a functional disorder, practically always a complication of organic heart disease and cannot be considered apart from the parent cardiopathy. Exceptionally congestive failure may occur in a normal heart as a result of unaccustomed physical strain. In such cases the mechanism of failure is identical with that complicating heart disease. The crux of



Skigram Showing Marked Dilatation of Bladder and Upper Urinary Tract.

*From the Department of Practice of Medicine of the University of Texas, and the Medical Service of the John Sealy Hospital, Galveston, Texas. Presented before the Southwestern Medical Association, El Paso, Nov. 21-23, 1935.

the pathological physiology of congestive failure is an increase in venous pressure in organs affected by the chamber which first fails. In primary left ventricle failure the pulmonary circulation first suffers while the right ventricle, the liver, gastro-intestinal tract, and lower extremities are first affected by the increased venous pressure. Usually one ventricle fails ahead of the other, but in time both fail, and frequently patients are not seen until extreme congestive failure is established. As the condition progresses with rising venous pressure an increase in capillary tension produces accelerated filtration through the capillary wall resulting in edema and serous membrane effusion. Increased capillary permeability from anoxemia also facilitates passage of fluid into the tissues. Thus, is produced the characteristic clinical picture of severe congestive heart failure—a patient, orthopneic, with pitting edema of the dependent portions of the body, hepatic engorgement, ascites, pulsating veins in the neck and pulmonary edema. Chemical changes in the heart muscle are of great significance in the alterations in function and one hope lies in the advancement of knowledge concerning them.

Chronic valvular heart disease, essential hypertension, and coronary artery disease are the common causes of congestive failure; pulmonary emphysema, other pulmonary affections that increase the tension in the lesser circulation, thyrotoxicoses, myxedema, congenital cardiac defects, chronic obliterative pericarditis, and others are less frequent causes. In mitral valve disease and pulmonary diseases the failure usually begins in the right ventricle; but in aortic valvulitis, essential hypertension, and coronary artery sclerosis primary left ventricle failure is the rule. The outlook varies with the casual factors. When due to rheumatic heart disease a relatively long course may be expected in contrast to the comparatively short course of that from syphilitic heart disease. Hypertensive heart disease and coronary artery disease stand in an intermediate position as regards longevity after congestive failure occurs. Because it is a complication of serious heart diseases and because it may cause complications in the brain, kidneys, liver, and other organs expectancy of life in congestive failure is difficult to estimate. A small number do not survive the first failure; others

go for years with greater or lesser degrees of disability. In addition to the etiological factors that are of importance in this respect other considerations are age, social status, sex, occupation, and the cooperation of the patient. The ease with which congestive failure is induced, the severity of the symptoms, and response to treatment give hints as to its probable course and duration. Failure is a threatening episode for the cardiac patient. However unpromising the prognosis may appear, much may be accomplished by proper therapy; suffering and disability may be relieved and life prolonged.

The symptoms of congestive failure are breathlessness, visceral congestion, venous engorgement and pulsation, cyanosis and edema. The diagnosis is relatively simple in most instances. The important diagnostic data are obtainable through the history and physical examination. Extensive laboratory studies and examinations with instruments of precision while helpful and at times necessary may be dispensed with in the average case. A routine blood count, urinalysis, and determination of the phenolsulphonaphthalein test for kidney function suffice in most cases. Electrocardiograms are instructive in the arrhythmias that frequently accompany congestive failure, and in the following the course of myocardial changes from coronary thrombosis. Metabolic rates and blood cholesterol levels give indispensable information if disordered thyroid function is the cause of the heart disease. Determinations of vital capacity with a spirometer are useful, but at best only estimates of the pulmonary congestion and breathlessness.

Treatment: Other factors being equal the fate of the congestive heart failure patient depends to a large extent upon the accuracy and thoroughness of the therapy prescribed and the meticulousness with which it is carried out. In few medical conditions is the success attained through treatment so reliable a measure of the knowledge and skill of the physician and the faithful cooperation of the patient. In the average case in the initial attack treatment is as simple as it is efficacious. Complete bed rest, usually aided by morphine or by non-narcotic hypnotics in mild cases, is of first importance; by it alone recovery may be complete. No compromise in the question of bed rest should be considered until the acute phase

has passed, and even then it is preferable to overdo that part of the treatment. A simple, well balanced, palatable, bland diet of low or moderate caloric value, with fluids restricted to 1000 to 1500 c.c. per 24 hours is as satisfactory as the so-called cardiac diets—low protein, salt poor, high carbohydrate, and high potassium diets—often recommended. Every patient with congestive heart failure should be completely digitalized and so maintained indefinitely if not permanently. This applies especially to cases of auricular fibrillation; unless the ventricular rate is slowed by digitalis acting upon the A-V node and bundle, recovery is unlikely. Powdered whole digitalis leaf in pill form meets all requirements and has fewer objections than have other preparations for oral administration. The usual patient will require an average of 1.2 to 1.5 gm. (18 to 22½ grains) of powdered leaf digitalis, i.e. 12 to 15 tablets of 0.1 (1½ grains) mg. per tablet so standardized that each is one cat unit. Complete digitalization may be accomplished in 12 to 48 hours by dividing the total dose into three or four equal parts to be given at fixed intervals. Due caution should be taken that no digitalis or digitalis-like substance had recently been given. The maintenance does thereafter averages 0.1 gm. (1½ grains) in each 24 hours; this is variable in different patients and ranges between 0.05 gm. (¾ grain) and 0.2 gm. (3 grains) daily. Given in this manner digitalis is most valuable; yet it is striking how many patients fail to improve; because too little digitalis has been given!

While rest, low fluid intake, and digitalization properly applied will bring remission to the great majority of cardiac patients there are some who fail to improve unless other measures are taken. This is largely on account of a resistant and often massive edema. As Harrison and Pilcher¹ have pointed out edema primarily a symptom of congestive heart failure is also an impediment to recovery from it. Water-logged tissues impair blood flow, and diminish diffusion of oxygen from the capillaries to the tissues thereby acting as a further cause of heart failure. Therefore, the patient with a large accumulation of edema suffers as much from general circulatory inefficiency as from myocardial insufficiency. If edema persists despite conventional therapeutic measures

diuresis must be effective before congestive failure subsides.

Diuresis and Diuretics: My associates and I have reported studies^{2,3,4,5} upon the mechanism, general effectiveness, and clinical application of various diuretic drugs. As a result of these and comparable investigations by others it is possible to have a conception of the pharmacologic, therapeutic properties of these substances. Diuresis is only a supplement to complete rest, restricted fluids and digitalization and never as a substitute for them. It is usually after failure of the latter measures that diuretics are indicated.

There are two important groups of diuretics: The xanthines and the mercurials. We have shown that these compounds have different actions in producing an outpouring of fluid. The xanthines stimulate filtration tremendously in the renal glomeruli. The mercurials depress reabsorption from the renal tubules.

Xanthine diuretics: The xanthine derivative the ophylline-theline-diamine (aminophyllin) given intravenously is the most powerful of the group, not infrequently producing outputs in excess of 4000 c.c. in 24 hours. Furthermore it is relatively safe—the safest of the powerful diuretics. There is one drawback to its use; a mild syncope almost always follows its intravenous administration. None of these has proved serious in our experience, but in two instances convulsive seizures followed shortly after the injections. In neither instance was the result fatal though most disturbing. By mouth this drug has but slight diuretic effect; but it is of considerable value in the treatment of coronary artery disease since it increases coronary blood flow more markedly than does any other remedy.

Other xanthine preparations, theophylline (theocin), theobromine calcium salicylate (theocalcin), theobromine sodium salicylate (diuretin) and theophylline calcium salicylate (phyllicin) are generally satisfactory for oral administration, and are reasonably effective. All tend to produce gastric irritation with nausea and vomiting which limit their usefulness. Theocalcin is the least objectionable in this regard. In none of these drugs *per os* is the diuresis comparable to that from aminophyllin given intravenously.

Mercurial diuretics: Older physicians know that calomel possesses distinct diuretic prop-

erties, but owing to the hazard and uncertainty of its action it now is practically never used for this purpose. Within recent years two complex organic mercurials have been widely used for inducing diuresis. Novasurol, (merbaphen)—3.9 per cent mercury—was originally introduced as an antisyphilitic; but its value as such is slight compared to its usefulness as a diuretic; given intravenously it is probably the most powerful of all antiedemic substances. Its ease of administration and effectiveness commend it highly, but serious objections to it exist since not infrequently it causes severe renal injury, colitis, and stomatitis. On this account it has been largely discarded in favor of salyrgan (mersalyl)—39.6 per cent mercury. Salyrgan is almost if not equally as satisfactory as novasurol and is decidedly less toxic. Intravenously it causes marked diureses, usually without harm though occasionally renal damage with acute urinary suppression has been observed.

Combined use of xanthine and mercurial diuretics: A clinical test of combining the two types of diuretics was made. Theophylline-ethylene-diamine was given intravenously; the degrees of diureses was noted; after return to the pre-diuretic state diuresis was induced by salyrgan; time was allowed for the urinary output to return to its former level; theophylline-ethylene-diamine in the same dosage as originally given was again administered; in most instances the diuresis was greater than that from the two preceding injections. This took place despite the removal of much of the edema. Obviously what happens under such circumstances is that reabsorption by the renal tubules is still depressed by the mercurial and xanthine which increases glomerular filtration causes much more fluid to pass through the tubules than occurs normally.

While these studies were in progress there was developed in Europe a combination of a xanthine with a mercurial. This is called novurit; in the United States it is marketed as mercupurin. It contains 41.1 per cent mercury and 3.5 per cent chemically bound, and 1.5 per cent free, theophylline. It is recommended chiefly for intravenous administration but may be given intramuscularly—never subcutaneously. After having given mercupurin to many patients it seems safe to assert that, it is a powerful diuretic, the safest of any diuretic con-

taining mercury, and may be given repeatedly at short intervals without obvious visceral injury. At the present time, in the medical clinic of the John Sealy hospital, it is the diuretic of choice when a highly potent drug of this type is indicated.

Ammonium chloride or ammonium nitrate in doses of 90 to 120 grains daily by mouth for two or more days preceding the intravenous administration of novasurol, salyrgan, or mercupurin almost invariably greatly enhances their diuretic action. By some this is thought to be a result of the mild acidosis from the salts but by others it is considered to be a summation effect of two drugs both diuretic in action. However that may be the combined therapy with ammonium chloride and a mercurial causes more consistent and profuse diuresis than can be obtained by any substance alone. In some obstinate cardiac edemas this plan may be successful in removing large dropsical accumulations where all other methods singly or collectively have yielded indifferent results.

Other diuretics: Certain salts of bismuth, reported by some⁶ to be effective diuretics, have failed in our hands in congestive heart failure—even in that caused by syphilitic heart disease. Bismuth is a most valuable remedy in the treatment of cardiovascular syphilis, but not of cardiac failure with edema. A few cases of syphilitic nephrosis have shown striking diuresis under bismuth therapy, but that is beyond this discussion.

In massive doses (one to two ounces—30 to 60 gm.) urea is occasionally a diuretic of merit, providing it is not administered to patients with renal impairment. It is usually given in a flavored aqueous solution (25 to 50 per cent). The low toxicity of urea together with the fact that it may be given for long periods without detriment recommend it for an occasional case. It is relatively more effective in ascites and widespread subcutaneous edema, than in minor edemas. Its greatest usefulness is in chronic and resistant edema of cardiac origin.

Parathyroid hormone by mobilizing calcium occasionally gives striking diuresis sometimes effective where other diuretics fail; but since so little is understood about its action selection of cases for it is almost exclusively on a trial and error basis. For this reason parathormone should be used but seldom as a diuretic.

Thyroid substance has been repeatedly shown to be a specific remedy associated with myxedema heart. It not only relieves myxedema, but it removes the accumulation of tissue fluid, something impossible of accomplishment with any other substance in these cases.

Summary and Conclusion

1. Some of the essentials in the pathogenesis of congestive heart failure have been discussed, together with an outline for treatment of the average case.

2. The important role played by extensive edema of cardiac origin against recovery from congestive heart failure has been stressed, and the necessity for its removal emphasized.

3. The mode of action of xanthine and mercurial diuretics, their relative value, their combined use, and clinical application have been presented.

4. Other diuretics of minor importance have been tersely discussed.

In conclusion it should be emphasized that for maximum benefit in congestive heart failure a comprehensive study of each case must be made, especially as regards etiology, tissue change and functional disturbances. Many other relevant and variable factors must be taken into account in individual cases. With the data so obtained, the physician is equipped to proceed with therapy—rational, conservative, and more than moderately effective.

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Human Personality and The Environment by Charles Macfie Campbell, Professor of Psychiatry, Harvard Medical School; The MacMillan Company, New York.; 1934; \$3.00.

The author shows that there is a definite relationship of the personality of individuals to the physico-chemical environment. He deals with the subject in as complete a way as is possible; biographies have been borrowed from extensively; he discusses general principles in detail. On the whole it is extremely interesting and deserving of reading.

DIVERTICULUM OF THIRD PORTION OF DUODENUM

CASE REPORT

WILLARD SMITH, M. D.

Introduction

W. Warner Watkins, M. D.
Phoenix, Ariz.

INTRODUCTION

Duodenal diverticulum is a fascinating chapter in medical history. Chomel first described the lesion in 1710, and during the next two centuries fewer than 100 cases were reported. In 1913, Case showed the lesion by x-ray, exhibiting films of four cases in the scientific exhibit of the American Medical Association of that year. In 1915 he showed 25 additional cases. Stewart, in 1916, mentioned duodenal diverticula among obscure lesions of the gastro-intestinal tract. Case, in the same year, reported further observations and cited one case in detail with diverticulum of the third portion; this was explored surgically by Kellogg but the diverticulum was not removed.

Larimore and Graham, in 1920, described surgical procedures on three cases of pseudo-diverticula. One of these is an excellent parallel to Dr. Smith's case, being a traction diverticulum from the third portion. To expose the lesion the ligament of Treitz had to be cut. The patient died from peritonitis on the fourth post-operative day.

McQuay, in 1929, first reviewed the history of this lesion and then discusses the difficulties of the surgical treatment, citing 10 illustrative cases, as follows: (1) Diverticulum in second portion, not found by surgeons, cholecystectomy, pouch still present after operation, shown by x-ray; (2) diverticulum in first portion complicating ulcer, gastro-enterostomy and inversion of pouch; (3) diverticulum in second portion, on free border and excision of pouch; (4) diverticulum in second portion not removed, cholecystectomy; (5) diverticulum in second portion treated medically; (6) diverticulum in second portion, patient had previously had gastro-enterostomy for supposed ulcer, excision of pouch, gastro-enterostomy closed and gall-bladder removed; (7) diverti-

culum in first portion with ulcer, gastro-enterostomy; (8) diverticulum not readily exposed, and dissection to locate it considered advisable; (9) diverticulum in second portion, gastro-enterostomy and cholecystectomy; (10) two diverticula—in second and third portions, large, found only by opening the duodenum and locating inner openings with finger in the pouch, was freed by blunt dissection.

Other excellent articles on the subject are those by Heacock (1929) Pendergrass (1931), Herbst (1927), Cole and Roberts (1920), Davis (1933), Gibbon (1933), and Moore (1920).

Although the lesion is found in the third portion of the duodenum in from 15 to 20 per cent of the cases, the reports of successful operations on diverticula in the third portion are rare.

CASE REPORT

My object is to secure for St. Joseph's Hospital credit for the successful treatment of an unusual case—a diverticulum of the third portion of the duodenum. Search of the available literature has not revealed a similar case successfully treated by surgery. The diverticulum is of the third portion of the duodenum; Sir Berkely Moynihan has stated that the surgical approach to this region has not been satisfactorily worked out. In brief the case is this:

In December, 1932, I did a cholecystectomy and an appendectomy upon a female, age 52. The gall bladder was swollen and tense and had two dark, apparently gangrenous spots about a fourth of an inch in diameter. It was removed without leakage, but in the specimen pan spontaneously perforated through one of the black areas. It had a large number of small stones, but search of the mucosa did not reveal mucosal gangrene.

The postoperative course, so far as the operative area was concerned, was about as usual. On the 10th day she ran a temperature of 102 degrees and developed a dermatitis on her right breast which during the subsequent month involved practically all of her body; it cleared up in one place as it extended in others. It eventually got well; she was relieved of her digestive troubles.

In October, 1934, I removed her infected tonsils with the hope of benefiting her hearing, and head noises. The noises were improved but not the deafness. By September

26, 1935, she had lost considerable weight, had a lemon yellow tint to her skin, complained of the formation of a great deal of gas in her stomach whenever she ate and had clay colored stools and a general itching. She improved a little on cholagogue treatment but on October 4th vomited all day and had subnormal temperature. A lump appeared in the epigastrium. I sent her to the hospital and asked Dr. Watkins to make x-ray examination. Tumor of the pancreas, mural pathology of the stomach or pylorus and stone in the common duct seemed to be ruled out. She had gastropnoxis. The third portion of the duodenum showed plainly two inches or more above the lesser curvature of the stomach, where it was apparently adherent, and at the top of the inverted V was a small definite diverticulum.

It seemed to me that this distortion of the third portion of the duodenum, when combined with the ptosed stomach, could produce a pull which would cause at least intermittent partial obstruction of the outlet of the common duct. I advised operation, and on October 9th reopened her abdomen. I inspected the first and second portions of the duodenum; the entire common duct was clearly in view and visual and palpatory examinations failed to reveal stone. There was slight dilation of the common duct. On the end of the cystic duct was what E. Starr Judd had called a "bud" about five-eighths of an inch in diameter, which appeared perfectly healthy and was evidently an attempt on the part of nature to make a new gall bladder.

By finger dissection, I separated the pancreas from the posterior wall of the stomach, so that I proceeded first down, then back, then up behind the pancreas until the adherent third portion of the duodenum could be palpated. The adhesion was to the aorta between the coeliac axis and superior mesenteric artery. Doctors Thayer and Saba were assisting, and verified the pathology. The pancreas was not injured. By finger dissection, I released the adhesion, whereupon the third portion of the duodenum dropped to its normal position and the traction diverticulum flattened out so that it was no longer palpable. The gastro-hepatic ligament was plicated after the manner of Beyea, and the abdomen was closed.

Her postoperative course was singularly free

from untoward symptoms. Two days after the operation she was handling carbohydrates; in three days she was on light tray and in six days on general diet. Her digestive symptoms have apparently been relieved.

Comment

It seems that the obstruction at the outlet of the common duct was due to the upward pull on the duodenum by the adhesion and the downward pull produced by the stomach. This was apparently corrected by releasing the adhesion of the third portion of the duodenum and by the gastropexy.

The unusual feature of the case was the necessity for devising a method of approach to the third portion of the duodenum. That approach seems to have been safe and effective.

SUBMUCOUS FIBROIDS

LEIGHTON GREEN, M.D., F.A.C.S.

The two cases of submucous fibroids which I present tonight are of sufficient rarity to be interesting.

Case 1. A Mexican woman, age 54 appearing 65, was brought into the City-County Hospital on the evening of October 19, 1934, apparently exsanguinated. She related that vaginal bleeding had first been noticed a few hours before admission. Abdominal cramping pain began and increased in severity. Suddenly, there was a gush of blood and a round mass protruded from the vagina. The physician who examined her at home reported that she was lying in bed in a pool of blood. He insisted on immediate hospitalization.

Examination revealed that hemorrhage had not ceased. Her pulse was 124 per minute, and temperature 102°. Mucous membranes were pale, and she bore an anxious, pinched expression. A firm tumor was hanging out of the vagina about the size of a tennis ball, presenting a smooth endometrial surface. The pedicle was continuous with the endometrium of the fundus, which was completely inverted, its bleeding endometrial surface exposed in the vagina. The protruding fibroid was dragging over the anus.

The patient was in shock. To check hemorrhage, the fibroid was tied off at its pedicle and excised; the fundus was pushed back into the vagina and a large pack of mercurochrome

gauze was inserted. It was impossible to restore the uterus to normal position. The following day, the patient showed improvement. Her pulse rate was 90 and temperature 99°. Under ether anesthesia, vaginal hysterectomy was done. The left Fallopian tube presented itself when the peritoneal cavity was opened. Rather than replace it into the peritoneum, the tube was removed. No drain was used. Perineorrhaphy was done.

Post-operative convalescence appeared to progress well. Two days after operation, temperature was normal. The third day, however, distention and vomiting began. The patient became lethargic, then comatose. On Oct. 26, six days after operation, she died. Autopsy revealed generalized peritonitis.

Case 2. An unmarried Mexican woman, age 28, was admitted to the City-County Hospital on Sept. 24, 1934. She had backache and vaginal bleeding. Her menstrual history was of interest. Beginning at the age of 14, she had menstruated regularly every 28 days until about one year before admission. At that time menstruation had become irregular. One period was characterized by menorrhagia, the next by scanty menses. On Sept. fifth menstruation had begun at the proper time, but bleeding had continued for eight days, stopped for two days, then had recurred. Backache had become annoying. The lumbar pain was relieved following a gush of blood from the vagina. Then shortly pains were as severe as before. Numerous clots were passed. The physician who attended the patient reported no results from administration of ergot.

The girl was very anemic. Her hemoglobin was 40 per cent, and reds were 3,700,000. Rectal examination revealed a firm mass in the vagina. The cervix could not be palpated. It was necessary to dilate the vaginal introitus before vaginal examination could be made. The firm mass was within the cervical canal. Surrounding it was a thinned-out cervix. The tumor resembled a presenting head about to deliver through a thinned-out cervix dilated to the size of a half-dollar. A diagnosis of submucous fibroid was made.

Pre-operatively, a transfusion of 400 c.c. of citrated blood was given. On Sept. 27th, under ether anesthesia, the vaginal introitus was further dilated. Inspection of the fibroid bore out the impression that the tumor had acted as a

ball-valve, to produce intermittent blocking and pain. The fibroid was grasped with a forcep and freed from its pedicle by torsion. The mass was too large to be delivered through the cervix. A deep incision was made in the anterior lip of the cervix. Still the fibroid rolled about in the uterus and could not be extracted. It was necessary to section the tumor and remove it piece-meal. The fibroma was about 10 cm. in diameter. The uterine cavity was packed, and the cervix incision was sutured.

A second transfusion of 400 c.c. citrated blood was administered post-operatively. Her temperature reached 101 on the first post-operative day, then fell to normal. The uterine pack was removed on the third day. Recovery was rapid. On October 3rd, six days after operation, the patient left the hospital, in good condition. Subsequent reports—the last one in April, 1935—are that she has menstruated normally since the month following operation, has regained normal hemoglobin, and has no pelvic symptoms.

Comment: Case one presented the tragic end-result of neglect. One week previously, removal of the submucous fibroid would have been simple. But inversion of the uterus forced operation through an infected field. Case two was singularly similar in pathology. Operation before inversion and infection occurred was technically easy, but hemorrhage had reduced the patient to the class of poor surgical risks.

According to Lockyer¹, submucous fibroids arise in the muscular coat of the uterus just below the mucosa, then project into the uterine cavity. The tumor excites uterine contractions which cause it to be extruded further from its bed and to occupy more and more of the uterine cavity. Thus the growth becomes pedunculated. Stoeckel² warns of the danger of degeneration and infection usually followed by hemorrhage. Necrosis is more apt to occur than in fibroids of the intestinal or subserous type. Severe metorrhagic bleeding is common.

The only treatment is surgical. X-ray has proved ineffective with submucous myomas. Curretting increases the danger from hemorrhage and opens a wide field for infection. For small tumors a convenient instrument to use is a tonsil snare; the tumor can be drawn out and clipped off at the pedicle. Graves³ advises clamping the pedicle, whenever possible, excising the fibroid, and leaving the clamp in

place for three or four days. Occasionally the pedicle is accessible for ligation.

Jeff Miller⁴ in discussing inversion of the uterus, says that apart from obstetrics the condition is rare, that it is produced by an attempt of the uterus to expel the fibroid. He adds that in the presence of infection, hysterectomy is the procedure of choice.

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I. RICKETS AND SCURVY IN WELL-NOURISHED CHILD—CASE REPORT

II. IMPERFORATE ESOPHAGUS—CASE REPORT.

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A male Mexican seven months of age with swollen painful right knee was admitted to the hospital and died 15 days thereafter.

The positive findings were: Poor physical condition; saddle-shaped nose; leucocytes day after admission, 10800—34 polymorphonuclears, four mononuclears, 62 lymphocytes; leucocytes, 12 days after admission, 27000—46 per cent polymorphonuclears, 10 monocytes and 44 lymphocytes; urine had albumin, red cells and finely granular casts; the upper end of the tibia was poorly defined with epiphyseal line slightly eaten out on the x-ray film. The working diagnosis was rickets and scurvy.

The positive findings on autopsy (by W. W. Waite, M.D.) were: Well developed, well nourished child; little subcutaneous fat; both legs swollen; left leg livid and discolored; spleen possibly enlarged; possible congestion lower lung lobes; tissues of thigh much swollen; marked gelatinous connective tissue infiltration with edema about the knee with hemorrhage near the bone; round cell infiltration of kidney cortex; and fatty infiltration of liver cells. **Diagnosis:** Rickets, scurvy, possible nephritis and terminal pneumonia.

A child, four days of age, was admitted to the hospital because all food and water swal-

lowed returned through the nose and choked her. She had difficulty in breathing due apparently to thick mucus in the bronchi, was cyanotic and in poor physical condition. Feeding was by rectum.

Family history was negative. The father had had repeated negative Wassermanns.

Passage of bronchoscope revealed complete esophageal obstruction three inches below the larynx. Gastrotomy was done on child's seventh day of life placing tube in the stomach. Although immediate postoperative condition seemed good she died within two hours. Autopsy (by W. W. Waite) confirmed the diagnosis of imperforate esophagus—complete obliteration of the channel of about the lower half. There was also a consolidated right lung and a hemorrhagic infarct of left ventricle.

STUDIES ON THE NATURE OF PHAGOCYTOSIS

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(Concluded from March Issue)

Before proceeding to the results of our investigations we insert a note on technique. We have utilized the technique introduced by Wright and Colebrook which we have attempted to improve by methods of our own and those of other workers.

Our purpose was to develop a plan whereby our technique could be standardized as nearly as possible, the materials used kept of uniform degree, and the observations carried out by the same observer in all cases. After many corrections induced by trial and error we selected methods which we believe are as uniform as is possible to make them, deducting of course, the huge factor of personal error. This last factor was minimized so far as possible by having one observer carry out all the experiments, the importance of which lies in the fact that once the observer has mastered the technique, which is relatively simple, the daily repetition of it becomes nearly mechanical. For that reason the element of error became a constant factor. Where more than one observer is involved the personal error is non-calculable, as it varies with each observation and cannot be dealt with when percentage error is computed.

The technique, briefly, consists of drawing a measured amount of bacterial suspension into a capillary pipette, followed by a similar amount of washed leucocytes and a like amount of fresh blood serum. The whole is thoroughly mixed by expelling the contents of the pipette into a watch glass and drawing it again into the capillary tube. The tube is then sealed and placed in the incubator (37°C) for 20 minutes while phagocytosis takes place. The tips of the pipettes are then broken off and the contents spread on glass slides in the manner of making a blood film. The films are dried in air and stained with any good blood stain such as Wrights, Jenners, or Leishmanns. We have had particularly good results from a stain developed in the course of earlier researches. It consists of pyronin, methyl green and carbolic acid and imparts a deep blue color to the nucleoli of the neutrophiles, a pink to the cytoplasm, and a red to bacteria. After the slides are stained and dried they are examined under the oil immersion lens and the number of bacteria phagocyted by each leucocyte is taken as the phagocytic index.

In our experiments the blood serum and leucocytes were obtained from the observer before each test, and a blood count from time to time checked the approximate number of leucocytes used. A sterilized bacterial suspension of staphylococcus aureus, standardized by direct count, was used in all experiments except as otherwise noted. All glass-ware, bacterial suspension leucocytic mixtures, blood serum and saline solutions were kept sterile and at 37°C. These added precautions were found to be worth while, in that phagocytosis was more rapid and complete when this method was used than when the usual technique was employed. We concluded that less injury resulted to the leucocytes during manipulation under these more favorable circumstances.

Routine experiments were first carried out with heated and unheated serum, with normal salt solution and with Ringer's solution, the results of which are shown in the following table:

	Phagocytic count
Unheated serum	15.4
Salt solution	8.2
Ringer's solution	10.4

Heated serum (37°; ½ hr.)	14.6
Heated serum (37°; ½ hr.).....	2.5
Heated serum plus diluted serum (1-15)	14.6
Unheated serum plus diluted serum....	15.0

Although the phagocytic index is greatest when unheated serum is used it is shown that heated serum fortified with fresh diluted serum is capable of reactivating the heated serum to a degree almost equal to that of the unheated serum. It was also shown that the use of Ringer's solution gave a considerably higher index than normal salt solution, and for that reason it was used throughout the subsequent experiments in place of normal salt solution. The fact that the index was much higher when Ringer's solution was used than when heated serum was employed, leads us to believe that the heat-stable factor of the serum plays little part in preparing bacteria for ingestion. In that no serum constituents were present when Ringer's solution was used, it is fair to deduce that the leucocytes themselves are capable of producing a small amount of alexin which activates the process. This possibility was alluded to in a previous chapter. Spontaneous phagocytosis would not account for the high index obtained with Ringer's alone. Why the index was so low with heated serum alone is a matter of doubt. It may possibly be due to the altered proteins, produced by inactivation, which have combined with the protein of the bacteria rendering them less amenable to phagocytosis.

In our tests with both Ringer's and salt solution we obtained considerably higher indices than those reported by other observers, and account for this by the more careful technique and less injury to the leucocytes.

Since our experiments show no great difference between the phagocytic index (compared to other observers) as between unheated serum and Ringer's solution we are more firmly convinced that normal opsonins play a less important role in the process of phagocytosis than was originally believed by Wright and his associates.

When preparing either serum or leucocytes for phagocytic tests it is obviously impossible to completely separate all the constituents of whole blood from each other, even with a large number of washings. (We found that the more

vigorously the leucocytes were washed the less active they became, due to mechanical injury.) Believing that it was probable that some opsonic substance adhered to the red cells we added a small amount of washed erythrocyte mixture to Ringer's solution and obtained an index as high as that found when unheated serum was used. This indicated to us that the presence of any component of fresh blood activated the process of phagocytosis to a greater degree than when only salt solution or Ringer's was used.

In reconsidering the theory of opsonins we attempted to "fix" the complement of normal serum with serum (antibodies) from a syphilitic patient, to determine whether or not the so-called opsonic substance was identical with, or closely related to, complement. After the normal complement had been fixed the washed serum from the reaction was employed in the usual manner in phagocytic determinations. Due to the complicated factor of two sera being employed our results could not be accurately interpreted, but our findings indicated that fresh complement must be present for a maximum amount of phagocytic activity to take place. Although we assumed that the complement had been fixed and that opsonic substances were still present phagocytic counts averaged less than when fresh unheated serum was used.

To investigate the theory of chance of collision we carried out phagocytic tests in the usual manner, coupled with various means of agitation of the capillary pipettes after the several suspensions had been mixed and sealed within the pipettes. It was found that centrifugalization at speeds from 10 to 300 revolutions per minute did not increase the phagocytic index, while speeds above 300 revolutions per minute decreased the index considerably. These experiments were repeated many times and the results were always the same. Gentle agitation of the tubes by hand gave the same results, and we were forced to conclude that chance of collision plays little, if any part, in determining the number of organisms which may be phagocytosed by a given cell. Robertson and Todd, however, reported that agitation of the tubes caused more organisms to be taken up than when not agitated.

The number of cells and bacteria used in all

of these experiments was standardized as nearly as possible so as to allow about 15 bacteria to each cell. This proved ample for maximum phagocytosis and at the same time facilitated counting. Experiments conducted with the same number of bacteria and an increased number of cells did not affect the phagocytic index. Likewise, an increased number of bacteria with the same number of cells did not affect the index.

In that practically all of our results have been of a negative nature up until the present we have omitted tables, graphs and other experimental data. These data are available for any who may be interested.

Many workers have recorded the effect of virulent organisms on phagocytosis. Our experiments indicate that this is the greatest single factor dealt with. Experiments made with virulent staphylococci, recovered at autopsy, showed a phagocytic index of half that shown with the same strain of organisms after attenuation. These experiments were repeated many times over a period of years and we are convinced that the virulence of the organism encountered plays a most important part in the process of phagocytosis.

It has been conclusively shown by experiments in vivo that highly virulent bacteria are less apt to attract wandering cells and induce phagocytosis than are attenuated bacteria of the same kind. For instance, if attenuated anthrax bacilli be inoculated in one ear of a rabbit and virulent anthrax bacilli inoculated in the same manner and dose in the other ear of the same rabbit the results are quite different. In the one ear the attenuated bacilli induce a tremendous accumulation of leucocytes, while in the other ear fluid is poured out into the tissues with little or no attraction of leucocytes.

The state of resistance of the animal is also important. Immunization to anthrax renders an animal capable of responding to a dose of virulent bacilli by an accumulation of leucocytes, while a similar dose in an untreated animal induces only a huge outpouring of fluid. The presence of soluble bacterial products in a definite locality tends to favor the attraction of leucocytes from the neighboring blood vessels, while the circulation simultaneously of the same materials in large quantities in the

blood stream tends to prevent it. This is demonstrated by inoculating bacillus anthrax into the subcutaneous tissues of a rabbit where leucocytes rapidly accumulate at the site of inoculation, and abscesses result. If another rabbit be similarly inoculated, while in addition an intravenous inoculation is made, there is tremendous outpouring of fluid, but no leucocytes at the site of the subcutaneous injection, and death results in a few hours.

Hence, phagocytosis is most likely to occur when the invading bacteria are not too virulent, when the resistance of the host is great, and when the irritants and soluble products are present in much greater abundance at a point outside the vessels than in the circulating blood.

Conclusions.

(a) Normal opsonins play a relatively unimportant part in phagocytosis.

(b) "Washed erythrocyte mixture" supplies the material necessary for ingestion.

(c) Complement is necessary for maximal phagocytosis.

(d) The current ideas regarding chance contact are not confirmed.

(e) The more virulent the organisms, the less phagocytosis.

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MEDICINE AND MEN

A Discussion of Compulsory Sickness Insurance

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(Reprinted from N. Y. State Jour. of Med., by permission of Debate Handbook. Bold face is ours.)

(Concluded from March Issue)

"Judging by these facts, the conclusion seems inevitable that the very classes for which insurance is proposed are now receiving under a system of private medical practice, in the United States and Canada, medical care far superior to that which is supplied when the same classes are put under an insurance system.

"That this conclusion is justified is also the opinion of the observers in countries now having insurance. Edwin H. T. Nash, public health official of England in discussing 'The Present Position of Diphtheria Immunization' in the Journal of State Medicine, September, 1934, pages 522 to 526, says:

"At long last this country is really waking up to the importance and safety of immunization against diphtheria.

"America has been some ten years ahead of us in this matter, due to a certain extent to the American flair for wholesale publicity together with a more polyglot population in its big towns that is more susceptible to flamboyant methods of propaganda than our more sober-minded and less emotional people. . . .

"As a contrast compare London, with 1 per cent of its school population immunized, with New York State, where the numbers immunized exceed 700,000. We have no figures in this country that can compare with those on

the other side of the Atlantic. None of us who are immunizing on a larger scale here can approach the figures in some of the American towns where diphtheria is being steadily eliminated. Take Hamilton, Ontario.

"In 1922 there were 32 deaths from diphtheria, when immunizing was begun.

"In 1925 the deaths had dropped to 14; in 1929 to 1; in 1930 there were 2, and in 1931 there were none at all. . .

"Just as I finish writing this paper, the Medical Officer of the 12th May reports that: 'The diphtheria ward of the Alexander Hospital at Montreal has been closed because there are not enough cases to warrant it being kept open. It was in 1928 that immunization against diphtheria was started in Montreal. The death rate that year was 28 per 100,000. In 1929 it fell to 15, in 1930 to 10, in 1931 to 6, and in 1933 to 2. Last year 52,063 Montreal children were immunized.'

"It is not easy to understand how altruistic laymen can see in compulsory sickness insurance the glorious vision of every man, woman and child getting adequate medical care. Nobody knows better than the physician what a very large order this is. Certainly it is not to be achieved by a system of compulsory insurance which has the result, everywhere that it has been tried, of over-taxing the physician, so that he cannot take the time to do his work well.

"The healing art is a difficult one, even when practiced by men of years of experience, with unlimited time at their disposal to pay attention to those cases presenting difficulties. It cannot be hurried and be effectual. Each case is an individual problem. For example: a middle-aged man consults his physician. He doesn't feel very well. The doctor asks him whether he has difficulty in climbing stairs. Now this patient may be in the very early stages of heart impairment, yet he is likely to resist questioning by his doctor which might disclose a disability. His pride intervenes. He is 'just as good as he used to be.' He denies he has any difficulty climbing stairs, not realizing that by withholding from his doctor important information he may be shortening his life. But it is the doctor's obligation to find out. He has ways to help him, such as testing blood pressure, and the electrocardiograph. These serve as aids in appraising the condition of the heart

and vascular system. The doctor knows very well that there may be a slight impairment at middle age which, if discovered in time, will respond to treatment and a more carefully regulated life. Under sickness insurance, he is not likely to have the time to devote to this man to get from him those casual admissions which every doctor knows are reluctantly drawn from many patients' lips, but do fall, ultimately, if he is persistent, tactful, and gains the complete confidence and good will of the patient. The fact is, and laymen need to be told this again and again, that the patient's conscious or unconscious resistance to the doctor is frequently an impediment to giving him medical care. Time is required to overcome the patient's own unintentionally obstructive conduct. "What is spoken of as a clinical picture," says Dr. Francis W. Peabody, Professor of Medicine, at Harvard Medical School, "is not just a photograph of a man sick in bed; it is an impressionistic painting of the patient surrounded by his home, his work, his relations, his joys, sorrows, hopes and fears."

In no country where compulsory sickness insurance exists, is a physician able to give enough time to each patient to render the best service of which he is capable. There is plenty of evidence to support this statement, which may be said to be self evident from the fact that panel doctors everywhere are called upon to treat 30 to 60 cases per day. I have talked with many doctors from European countries whose statements substantiate my personal observation in England. I wish to call as witnesses a few who are selected because of some recent connection with the public discussion of the subject.

Gustav Hartz of Berlin will speak for Germany. He wrote an article entitled, "Will America Copy Germany's Mistakes?" which appeared in the New York State Journal of Medicine for March, 1935. I wish to quote a few comments which Mr. Hartz makes on compulsory sickness insurance in Germany, which has been in operation in that country for 50 years.

"The insured workman becomes a second class patient. The mass demand compels a limitation in the use of medicines. Doctors must not prescribe what they consider good for the patient; they are only allowed to give

remedies entered in a book of medical regulations for insurance purposes.

"Medical science has become a cheap article and doctors have given up conscientious treatment. The genuine patient is neglected, is not given the necessary care. The greater the mass consultation, the lower are the doctor's fees. They are, therefore, compelled to resort to mass practice.

"All this is at the workman's expense, for the part of the premiums supposed to be paid by the employer is in reality borne by the workman either as a consumer or wage earner. As the employer's premium share is immediately connected with the wage, it is shifted over on the wage. In Germany, no one any longer doubts the fact that the employer's share of the premium is taken from the workman's wages. What the employer pays as his contribution, he cannot pay the workman in the form of wages.

"A network of deception has been spread. In millions of cases wrong was turned into right and the gates opened wide to fraud. When wages are being decreased, when work is scarce and work hours shortened, when there are fewer shifts, many holidays, sick insurance comes in handy. One objects to the work he is given, another does not feel like working. Matters soon make an extensive controlling system necessary. This ends in badgering all persons.

"Patients are visited in their homes by controlling officials who have to convince themselves that the patient is really ill and not doing any work. The sick insurance engages so-called confidential doctors who have to submit the patient to a final examination to see whether he is too ill to work. The results of such examinations are to a great extent startling. Here is one instance from among thousands: 2008 patients were ordered to appear for a final examination. Eight hundred sixteen of them at once declared their complete recovery; 289 were found to be well by the confidential doctor. So nearly half of them were not ill at all.

"The confidential doctor is, so to say, the medical policeman, who not only controls the patients but also his fellow doctors who are treating them.

"The genuine patient is justly indignant to find that the existence of his illness is doubted,

and that he who has always paid his premiums regularly and has a right to demand conscientious attendance is considered a cheat.

"This system, together with the rest of the bureaucratic apparatus, has wedged itself between doctor and patient, completely destroying the patient's confidence in his physician, which greatly retards all recovery.

Shortly after the publication of the Hartz article, a corroborating letter was received from a German physician at present in this country.

The doctor was Dr. Paul G. Frank, a resident of Kew Gardens, New York. Said Dr. Frank:

"For almost thirty years I have worked as a German panel doctor under the conditions of compulsory sickness insurance, and for many years I was a member of the physicians' committee.

"During this period I witnessed a deterioration of the medical profession. It was gradual. It came about by the removal of the sanctions of preferment by skill and the substitution of preferment by convenience. What I mean is that an insurance scheme soon becomes a business—it must do so to succeed, while the practice of medicine must be a profession to succeed at its best, and two will not mix. In Germany the physician who was most adaptable to the advancement of the plans of the insurance officials, and who most pleased the patient for reasons perhaps quite other than skill, obtained the most rapid preferment. It is true there were few opportunities left which made it possible to adhere to higher standards—I for instance had such an opportunity being a specialist—but many men who might have gone far were ruined by the stultifying panel practice.

"In the late nineties at the university we did not much esteem the the panel idea. In those early years of compulsory insurance the lay public knew these doctors to be second-rate. Some years later when I left the university clinic I ceased to laugh at the panel doctor, for I became one myself. My fee averaged 50 cents each for medical cases of three months' duration. Figure out for yourself how many of these I had to have to live decently, and figure, also, how much time I could give to each case. Of course, it goes without saying that a

young man of higher professional ideals does not think first of money, but first of his duty to his patient; yet he is forced, under sickness insurance, to make a decision between these two motives which often disastrously affects his attitude toward his work. It is only too easy to weaken, for he must live. The trouble with the scheme is that it encourages careless work by making it more easily profitable; the individual practice encourages good work, by making it, in the long run, more profitable.

"I dislike to touch upon the fact that the quality of young men choosing medicine as a career has not improved under sickness insurance, yet I believe it to be true. Bismarck hoped to combat socialism by such insurance, but on the contrary, it worked to encourage socialism. As a result there has been built up a bureaucracy which governs the whole system, and its members have been drawn from the laboring, clerical and generally less educated classes. More and more as the years go by the young students of medicine come from families of perfectly respectable, but not superior intellectual and emotional background. Response to professional traditions calls for certain native attributes which are not always acquired through university training alone, yet are of great social value in those who are to practice the difficult and dangerous art of healing.

"The American people will do well to pause long before adopting compulsory sickness insurance, remembering that such a system once instituted is sure to perpetuate itself. I have been in this country a year and a half. Some of the hospitals here are the most wonderful I have seen anywhere in the world, and I have travelled extensively in Europe. I wonder whether the average quality of medical care given in the United States is not superior to that which is given in countries where insurance plans are in operation.

"May I close by quoting a line from Shakespeare, which seems pertinent: 'Seeking to better, oft we mar what's well.'"

Turning now to Austria, let us summon a witness who appeared before the Legislative Committee of the Medical Society of the State of New York when it was in session at Albany in January, 1935. He is Dr. Jacob L. Moreno of New York City, director of research, New York State Training School for Girls, Hudson,

New York, and adviser of the Subsistence Homestead Division, Department of the Interior, Washington, D. C. Said Dr. Moreno:

"I know from experience with the actual reality that no matter how perfect the picture of ideal care for the poor that is presented by such schemes for sickness insurance, in practice they do not work. They cannot work, because they fail to take account of factors in human relations which are indispensable to the practice of the healing art.

"No physician is capable of properly treating the large number of patients sent him under sickness insurance. He is forced to evolve some mass production plan of operating his office to run people through his mill as fast as possible. A quick look, a stock prescription, a pat on the back, and out the door.

"The 'rush' system of handling patients is inevitable. When the technique of getting them in and out fast enough is perfected, the doctor begins to lose that intangible 'something' which is vital to both himself and his patient,—his morale. I do not know any doctor who remained long at this sort of practice in Austria who did not become hardened. A doctor's personal interest in his patient is essential. The response he makes emotionally to the trust reposed in him is important. If the patient comes to the doctor because of confidence in him and not merely because he is an insurance doctor, interest and insight are quickened.

"Every person's capacity to expand emotionally, and to sustain a confidential relationship, is limited. A physician may be able to maintain a keen mental activity while examining a few cases a day, but after his limit is reached, the power to sustain the faculties on a high plane wanes, until, finally, when the last case of a long line is reached, the patient becomes merely a serial number on a piece of paper. Insurance forces on the doctor an utterly impossible human task—to sustain a genuine personal interest in all the individuals of a miscellaneous crowd at his door.

"The insurance doctor does the best he can, but patients suspect they would get better attention if they came to him during his private office hours when he could give them more time. This is a distinct and definite injury to the character of the physician. He must hurry through his insurance patients so that he can

have plenty of his best self left to take care of his private patients. This is a corrupting influence. He knows he has not lived up to the highest tenets of his profession to give his best to every patient who comes to him. He has been forced by circumstances created by law to do less than his best toward some of his patients, and even his best with the few who see him privately becomes not so good as it was once.

"Nobody who has not seen such schemes in practice as I have, can realize how odious they are. They destroy everything that makes the healing art effective. A new face comes between the doctor and the patient, that of an inspector or supervising physician, or an insurance bureau bookkeeper, questioning this and that particular, without the intimate understanding derived from having seen and known the patient. At best, the real patient, the one for whom the mass production doctor is working, whom he must please if he is to live, is not the sick man, but an adding machine in the office of a bureaucrat who pays the fees out of an insurance fund. This man doesn't care whether the patient lives or dies, only how much he costs the fund. And his influence is exerted only in the direction of economy and other externals.

"Supervisors are needed in sickness insurance organizations. A good controller or supervisor who brings in many complaints against doctors is considered a good supervisor—he is headed for promotion because medical practice has now become a business instead of a profession. Thus do we destroy a truly healing relationship in which trust and confidence is the basis, and substitute a chain-store cut-rate imitation, which corrodes curative values needed to heal the sick.

"The system which we now have in the United States is not perfect. But I know from personal experience that the conditions imposed by compulsory sickness insurance are far worse. Insurance is a type of socialized medicine. It is impossible to socialize the doctor unless the business man, the banker, and the lawyer are socialized, too. Until the time comes, if it ever does come, when we have communism or some form of collectivism, compulsory sickness insurance simply will not work. Though it applies only to the lower income groups, those groups will always feel

they are getting less than they ought to get, even if the doctors are men of quality having lucrative private practices in addition to their insurance practice. Like all half-way measures, it will fail, despite the well-meaning altruism of those who sponsor such legislation. They do not realize, as the physician does, who has practiced under such a system, how destructive it is to quality in medical care.'

It is such a system as this which is proposed for the United States! Can the reader now appreciate why the medical profession in this country feels that in opposing it, they are fighting for their very existence as an honorable profession? We are asked to occupy our lives with false gestures of administering good medical care which the conditions will not allow us to give; we are asked to make ourselves a part of a gigantic bureaucracy and play politics with human lives.

What then, is the answer to the problem of improving the health of the public? I have alluded to it briefly in the first part of this discussion; I should like to refer to it again now. **Health education is the only sound measure. That portion of the public which is either ignorant or indifferent, need to know, and act on the knowledge that they must be examined by a physician, to learn their true condition; that they cannot tell it themselves, that they cannot rely on mere absence of pain as proof they are perfectly well. To teach people that they should have medical care when they are well and not wait until they are sick is an educational problem, and sickness insurance cannot possibly affect this element in the population.** So far as any need for better facilities to care for catastrophic illness or acute diseases, there is no evidence that these emergencies are not adequately met in the free clinic, the free hospital, and the private physician's practice.

The medical profession does not quarrel with the social theorist who wishes to bring preventive medical care to more people than now get it. That many lack this care always has been true, and it is true in every country today where sickness insurance is practiced. The school physician finds many children who have defects of tonsils, adenoids, sight; many who are crippled; many cardiacs. The world war disclosed fully that much medical care could be given the average citizen to his advantage, but it also disclosed a degree of indifference to

their own condition, which was the basic reason for the continued existence of many of these defects. Are there fewer defects under sickness insurance in England, Germany or Austria? I know of no such figures. But I do know that America, under individualized medical practice, has a lower sickness rate than these countries, and that preventive medicine, so far as I can find any statistics, has gone farther here, especially in diphtheria inoculation, in which we far outstrip countries which have succumbed to the illusive dream of collective medical practice.

If there were a doctor on every street corner, and medical service were offered free of charge, a large multitude of people would not stop to get it. They would continue with their physical defects for any one of a dozen reasons, and every doctor knows what they are. There is refusal point blank to believe these matters to be important; there is lack of intelligence to understand explanations when made; there is plain indifference, and rebellious disbelief in "high brow" ideas. These are problems for the educator. People of this class are not yet ready for preventive medicine; they think they do not need the doctor until they fall ill. Then, as we have indicated, they can and do obtain medical service.

Are we quite prepared to desert individualism in medicine in favor of collectivism, or any of the various forms of the socialistic state? Let us consider this theme, because it is apparent that this is the fundamental issue implicit in compulsory sickness insurance.

It is chiefly since the world war but also to some extent before then that socialism or at least socialistic trends have become increasingly apparent not only abroad but at home. The early history of the world relates the gradual establishment of increasingly stringent fundamental customs which may be considered evidence of collectivism in the broad sense. The Renaissance period of the fourteenth century was the rebirth of individualism, when men again became conscious of their individual power, exercised it to a new degree and realized personal responsibility. The Reformation of a later day was but a manifestation of this individualism.

It was not until early in the eighteenth century that rationalism, as we know it, became at all firmly established and it took all of another

100 years or more to create a "rugged individualism" by the complete breakdown of the old fundamental customs as the result of broader and higher education, the wonderful developments of science, the mingling of commercial and scientific peoples and the international competition in industry.

The era of "rugged individualism" which followed, noted the most brilliant period of progress in every age and in every science. So much so is this the case that one easily reaches the firm conviction that **true progress is due to individual rather than to collective effort.** This is the period in which America rose to its pinnacle of success, and in retrospect of this rise we can all point to individuals and not to groups who are responsible for it. Our country had its origin from those seeking individual freedom, its constitution is based on this same principle, its greatest success resulted from the achievements of individuals and its glory will go down in history as created by this "rugged individualism" rather than by group or collective effort in any sense.

In recent years, however, we have evidence of retrogression in the increasing domination of group spirit, the sacrificing of individual independence; a lessening sense of personal responsibility and a growing paternalism; the former intrepid pioneer in thought and act leaning more and more on the soft bosom of the state. Russia failed in her attempt in 1905 but succeeded in 1917, Italy followed in 1922, Germany after a trial as a republic for a decade or more now also has succumbed, and present day policies in our own country may throw us into the same class of nations yielding individualism to group domination and control.

The socialization of medicine is but a manifestation of the same spirit. The argument in its favor and those in opposition have been the subject of heated debate in recent years; they cover many pages of print which have been read and reread by us sufficiently often to justify one opinion. At the moment the medical profession is concerned with fundamental principles; we are fighting to prevent collectivism from succeeding individualism. We wish to avoid the inevitable retrogression which according to all history results when group control supplants independent individual effort.

It is hoped that nothing which I have pre-

sented here will be taken to mean that it is not desirable to promote action to improve the medical care received by persons in the lower income group, or to provide methods to distribute the cost of this care. My contention here is that compulsory sickness insurance will not achieve either of these objects. The American Medical Association has made studies of many plans which have been tried in various communities, and its bureau of medical economics presented a special report on this subject at the annual meeting held in May, 1935. This organization, as well as many state societies, including that for New York state, have approved plans for voluntary insurance, in which the vices inherent in the compulsory type are not to be found. These plans are not germane to this discussion, but I cannot dismiss the subject without adverting to them, to apprise the reader that the medical profession is interested in assisting the establishment of sound economic projects for the better distribution of medical care. None of these plans is a panacea. Some of them will work in certain communities, but must be altered to fit the institutions of other communities. There is no "royal road." The path to improvement is long and arduous.

Many physicians feel poignantly that an injustice is done us when, by implication and direct statement, the public is asked to believe that the doctors of the nation as "merchants of medicine" are obstructing, for purely selfish reasons, a movement to provide adequate medical care for the masses. Let me ask if it is reasonable to suppose that a group of men with so long and consistent a record of devotion to the task of alleviating the suffering of mankind are blithely to be outdone in effective humanitarianism, by members of certain pressure groups most of whom would not know how to pull a mote out of an eye? In making plausible theories we may be easily surpassed, for we are without skill in this; our claims for a sound and disinterested judgment rest with the very acts of performance on which society must depend for any improvement.

With the feeling that it is neither necessary nor desirable to distrust the competent man, nor to impugn his motives, this discussion is submitted for the thoughtful consideration of the lay public.

SOUTHWESTERN MEDICINE

Printed by THE A. C. TAYLOR PRINTING CO., Phoenix, Arizona
Published monthly for the Board of Managers of the four constituent societies.

VOL. XX.

APRIL, 1936

No. 4

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F. J. HOGELAND, M. D.	Sonora, Mexico

SOCIALIZED MEDICINE VS. SOCIALIZED GROCERIES

Life and comfort often depend absolutely upon medical care.

A person with a severed artery or vein, or with a complicated fracture or with diphtheria, appendicitis, asthma, eczema, or any of many conditions which might be named imperatively needs care from another individual trained in dealing with such afflictions.

A person must have food and water in order to live. His health will depend upon proper food and water both as to quality and quantity. In certain climates we might well include shelter and clothing along with food and water.

Shelter and clothing, however, usually may be provided through adaptation of castoff materials. Pure water also is commonly available. Many persons may even grow their own foods; but many more perhaps cannot do so.

It is also true that untrained persons may so care for many illnesses and injuries that life and health may not be sacrificed.

There are many indigents, nevertheless, for whom proper medical care and the right kind of food are imperative for life and maintenance of health.

Therefore it does not seem irrational to consider groceries and medical attention as necessities which should be available if and when needed at the price that the necessitous ones can afford to pay; or someone else should do the paying.

Should all grocery stores and all physicians be regimented, be made political subsidiaries simply because some persons want groceries and medical attention? We do not think so.

We believe, however, that both groceries

and medical attention should be available at variable prices. This does not mean that the fancy package of choicest groceries or the fancy cuts of meat should be priced to fit the pocket books of the poor as well as the rich or that the physician with an expensive office should charge but 50 cents per office visit. A cheap cut of meat may be just as nutritious as the expensive cut though perhaps less appetizing and less easy to prepare. The can of corn with an unattractive label and not a widely advertised brand, may be equally as nutritious as are the high priced widely advertised brands. The same is true of practically all food stuffs.

In a measure a similar condition exists in the availability of medical attention. Physicians generally graduate their charges to the ability of their patients to pay. Artistic office furniture, expensive paintings, high salaried help, fashionable locations, etc., are not the essentials for giving the best of medical care.

There is, however, "a fly in the ointment." The facts of medicine have accumulated to such an extent that a general practitioner or internist is in constant need of assistance from the surgeon, otolaryngologist, oculist, Roentgenologist, laboratory technician, allergist, urologist, and perhaps other specialists in order to deliver the high type of medical attention that the conscientious physician wishes to deliver.

For concreting thought we construct a hypothetical case: A man with an income of \$150.00 per month sends his wife to an internist for a diagnostic study; she has symptoms, which demand a thorough physical examination not only by the internist but by a surgeon. These two agree that she should have blood counts and urine examinations, perhaps the sugar, calcium or other ingredients of the blood

should be determined; an x-ray of the gall bladder and alimentary canal and certainly a fluoroscopic examination of the chest would not be wasted effort; the nose, sinuses and teeth should be examined most carefully. If the internist sends this woman to each specialist's office and a separate charge is made by each, the husband's bills likely will tax unduly his ability to pay. Suppose on top of this is needed a tonsilectomy, extraction of several teeth, and perhaps perineal repair, or an appendectomy. The husband thinks he'll manage. He will use his savings and by living close can pay \$25.00 per month for the next year or two and then can start again to build up his savings account. But before the bills are paid a child should have a tonsilectomy. Because this operation cannot be paid for the tonsils remain in the child's throat. As a result comes rheumatism and endocarditis, and perhaps nephritis. The child then needs laboratory work, x-rays, and perhaps catheterization of the ureters as well as a tonsilectomy. The internist knows the financial load of the father but of course cannot regulate the charges of his consultants.

Under the present system of private practice each physician keeping up his own offices and equipment, working as an individual, taking a full history of each case, making sufficient examination to proceed intelligently with the case must charge for the time spent and for his overhead.

Group practice, relatively new as it is in American medicine, seems to obviate some of the difficulties of the present system of private practice. The obstacle to group practice seems to be the intense individualism of physicians.

The very fact that a physician has to act with extreme assurance, taking a life in his hands as it were, gives him often extreme perhaps undue confidence in himself. This makes him a rank individualist. Medicine, however, is becoming more stereotyped, more scientific, so that it is possible and even probable that two or more physicians may see a case in the same way or at least enough in the same way that they can be tolerant of one another's viewpoint. This must come before group practice can succeed.

We wonder if group practice is the answer to the cry for socialized medicine. Without making radical changes in ourselves and in our system of practice as would be necessary in a

socialized system of medicine it may be enough to make slight changes in ourselves and in our system of practice and give more careful attention toward tempering the charges according to the ability of the patient to pay.

The indigent, however, cannot buy medical attention no matter how cheap, but neither can they buy food. Therefore we will socialize, politicalize, regiment all of our medical profession and all of our groceries; or will we improve the services offered by our county physicians and the foods supplied by our counties (abstract thinking is so prone to lead to error). Charity, the government, or someone supplies the money to pay for the groceries. The indigent should perhaps be allowed to buy their medical attention with the freedom allowed them in buying their groceries.

To assure the best of scientific work by groups who care largely for those with low incomes, the Government or large "Foundations" might own and lend to them the expensive equipment necessary for the work, and which such groups are unable to purchase.

Socializing our food establishments because a few persons cannot pay for the food they want would certainly be foolish. By the same course of reasoning socializing our entire medical profession would be equally as foolish. There are other and better ways.

One step toward the solution that would seem thoroughly fundamental is that persons who have not wages or salaries from private industries nor other incomes, should have them from always available government jobs. The wages and salaries should not equal what the same persons might earn in private industries. The reason for this is self evident; but a family should not go hungry or go without needed medical care. Jobs are easier to provide than is socialization of medicine and groceries.

SELLING A STATE MEDICAL MEETING

The medical profession of the entire State should be proud of the Medical Society of Santa Cruz County. If that organization has left a stone unturned which might cause Arizona physicians and their wives to at least wish to attend this year's meeting of the Arizona State Medical Association, we are certain that that stone has not yet had the attention of that organization centered upon it; we will even wager that there is no such stone.

The entertainment for the ladies has been planned to have this feature take precedence over all other features of the meeting.

Arizona physicians and wives! Plan to go to Nogales to this meeting. Dig up your communications postmarked Nogales. Read them. The program will be worth while. See the copy presented in full in this issue.

The social hour five to six—we have forgotten whether it's A.M. or P.M., and probably "Es macht nicht tus", for both will probably have their devotees. We are not for just either one. We are for both and all of them. And that cock fight! We have never been particularly fond of seeing anything pummel another thing—human or animal—but those Nogales physicians are such salesmen that we are about ready to admit that we must see that "cock fight."

Most especially do we remark about the excellent program which has been provided. Local talent predominates among the essayists this year more than ever. Arizona physicians know that their confreres are just as competent to present interesting instructive papers as are out-of-the-State talent. This is no reflection upon the guest speakers who have honored our Association by their presence or who may yet do so.

We are thoroughly sold on the ability of the physicians of the Southwest and our experience has given us contact more or less intimate with physicians of great medical centers not only of this continent but of others.

We predict that this will be an outstanding meeting of the Arizona State Medical Association and in advance congratulate Santa Cruz County Medical Society upon its success as host. Not intending to reflect that any member of that splendid society has not been working for the success of this meeting, first, last and all the time, since Nogales was selected nearly a year as the 1936 convention city we can not refrain from one remark:

We know from past experience that a successful committee or army, or it matters not what the group, has a chairman, a secretary, a leader without whom, or someone to take his place, the success would have been mediocre instead of great. We are certain that leader, no matter what his title, for Santa Cruz County is Charles S. Smith. We hope he has not worked beyond his strength.

THE 54th ANNUAL MEETING OF THE NEW MEXICO MEDICAL SOCIETY

In other columns we carry the program for the meeting of the New Mexico Medical Society to be held next month in Carlsbad. A glance at the program will convince the reader that there is a great deal of interesting discussion to be held during the three days May six to eight. Practically every subject listed seems to have been selected for the interest of the physicians who do general work. We mention but a few of them: The early diagnosis of tuberculosis, undulant fever, cancer of the cervix, cancer about the head, fractures, jaundice, blood transfusions, cystitis, and allergy. An interesting phase of the program is that the second day, May seven, is given over to the Public Health Section of the New Mexico State Health Society. Friday is to be spent at the Carlsbad Caverns—the meeting taking place in the Caverns lunch room.

The visit to the Carlsbad Caverns and having the meeting in the Caverns lunch room should add a novelty feature long to be remembered by those attending the meeting, especially those who have not previously had occasion to visit the Caverns.

Another feature about the meeting is the time. **There is just time to leave Carlsbad at the close of the meeting and reach Kansas City in time for the A. M. A. meeting.** This should attract many physicians from California, Arizona, and El Paso who plan to be at the meeting of the A.M.A. this year. **New Mexico physicians particularly** take notice of this year's meeting and attend. The program arranged for this meeting is a high grade intensive three-day post graduate course.

ARIZONA SECRETARY IS HONORED BY PHILADELPHIA MEDICAL SOCIETY

Dr. D. F. Harbridge, Secretary of the Arizona State Medical Association, was recently honored by the Philadelphia County Medical Society's voting him to Honorary Membership in that body. Since coming to Arizona some twenty years ago, Dr. Harbridge has, out of sentiment, maintained his original membership with the Philadelphia Society. At its last annual meeting, THE AMERICAN MEDICAL ASSOCIATION passed a by-law which prohibits a physician from holding active membership in more than one county or state society.

The Philadelphia Society thereupon wrote Dr. Harbridge that his active affiliation with that society must of necessity terminate, but further stated that: 'In order, however, that you may still be retained upon our rolls and that the association may be continued for all time, you have been unanimously elected to Honorary Membership.'

THE WEEKLY ROSTER AND MEDICAL DIGEST of the Philadelphia Medical Society states:

"It is most gratifying to us, and we regret to state unusual, for a member to express his appreciation of the sentimental value of membership in our Society and his evident realization that there is something intangible, as well as tangible, to be gained therefrom—if we look for it."

ATTENTION! Arizona Auxiliary Members. Physician! Take This to "THE WIFE" —

Mrs. J. C. Wilson, press and publicity chairman for the Woman's Auxiliary, has had news from Santa Cruz county which give her the impression that in preparation for the entertainment of the guests during the annual meeting, nothing is being neglected. They extend special invitation to the ladies; the president of the Auxiliary hopes for a hundred per cent attendance of the members as there is much to be heard from state chairmen and plans to be made for another year's work.

An Executive Board meeting will precede the opening session of the auxiliary.

The state press and publicity chairman wishes to impress upon the county chairman the importance of their sending or bringing to her all press clippings or other data of their activities during the past year. This is requested for the state history and archives which she is preparing for exhibition at the national meeting to be held during the early summer.

Elsewhere in this issue is a full program of the meeting as arranged by the convention committee. Plan to attend.

The dates are April 23, 24 and 25, in Nogales, Arizona. An excursion into Mexico following the close of the convention has been arranged and the committee requests that you make early reservation for it.

THE GUAYMAS TRIP

The Santa Cruz County Medical Society is advised by the Southern Pacific representative that there will be two air-conditioned pullman cars available for the Guaymas trip. Each car

will consist of two drawing rooms and six compartments.

Due to the change in the type of cars, the rate will be as follows:

Drawing room—two persons.....	\$24.00 each
Drawing room—three persons.....	21.00 each
Compartments—two persons	20.63 each

If sufficient number wish to make the trip another car will be provided. Reservations accompanied by check must be in the hands of the Santa Cruz County Medical Society not later than April 15th. The space in one car and part of the second was sold by the 21st of March.

Meeting place for the Arizona State Medical Association in Nogales, has been changed to Esplendor Hotel, where all the sessions, commercial exhibits, luncheons, and scientific exhibits will be held under one roof. The Headquarters are at the Montezuma Hotel.

DR. DILDY McCOWAN AUSTIN

Dr. Dildy McCowan Austin, Santa Fe physician at Belen for the past five years, died April first in St. Joseph's Hospital, after a short illness. He was 30.

Dr. Austin's former home was in Alto, Okla. He was a graduate of Oklahoma University and Tulane Medical School, where he completed his studies in 1930.

He was a member of Kappa Kappa, medical fraternity, and Pi Kappa Alpha fraternity.

His widow, a son and a daughter, all of Belen, his parents, two brothers and three sisters survive.

The parents and his brother are en route here. Funeral arrangements will be announced upon their arrival, Strong's Mortuary officials said.

DR. ANNA ISRAEL NETTLE

The Arizona Republic of March 10th carried the following story:

"Dr. Anna Israel Nettle, who came to Parker, Arizona three decades ago as the Colorado River Indian agency government doctor, returned today—in death.

Her ashes were buried beside those of her husband in Parker cemetery at 2:30 o'clock March 9th.

Dr. Nettle, who committed suicide, left a brief note:

"Let there be no funeral service, no foolishness. I have no relative. I leave money enough for my cremation."

The arrangements were simple, in deference to her last wish. But the entire town of Parker, Indian and white alike, stood at her grave. Most stores and all government offices were closed. C. H. Gensler, Indian agent, gave a brief history of her life. An Indian band composed of her friends played at the side of the grave.

Dr. Nettle, a native of Baltimore, Md., and a graduate of Johns Hopkins University, came to Parker 27 years ago.

She then was in her early thirties, and the only physician within a radius of approximately 100 miles.

Pioneer in spirit and action, nothing daunted her. A small woman in stature, brown-eyed, brown-haired, clad mostly in khaki shirt and old-fashioned divided skirt — apparel which she almost never varied; Dr. Nettle was a familiar figure in the territory.

When she first assumed her duties as government doctor she traveled afoot. Later she went on horseback, and still later in a government automobile.

Her first hospital was an old but spacious building on the Indian reservation south of Parker. This later was replaced by a modern hospital on the agency grounds at Parker.

Friends recalled today that Dr. Nettle apparently never counted money as of any value. No one here could remember her ever having sent a statement for professional services. Some paid without being asked; but whether her patients paid or did not pay, all received the same treatment.

What money she did earn she distributed among the Mojave Indians. Her pockets were always filled with candy and surprises for the children. One of the legends that has grown up concerning her is that she made taking castor oil a pleasure, because of the gifts she was sure to take to the child for whom she had prescribed.

Two years ago Dr. Nettle's health broke. For awhile she tried to continue her work, but finally she realized that ill health had defeated her and she accepted a pension and retired.

She was found dead in her Los Angeles room Monday, March 2. Doctors estimated she had been dead a week.

BOOK REVIEWS

Synopsis of Clinical Laboratory Methods by W. E. Bray, B.A., M.D., Professor of Clinical Pathology, University of Virginia; Director of Clinical Laboratories, University of Virginia Hospital; the C. V. Mosby Company, St. Louis, Mo.; 1936; Price \$3.75.

This book is exactly what the title indicates. It makes a handy reference book for a physician to refresh his mind about technique or about standards. For example: If one wishes to know about the creatinine or the chlorides of the blood, he needs a handy reference book to refresh his mind as to what is normal. Practically all laboratory procedures are described in the fewest possible words, for example: The test for melanin is described on page 46 in six lines and two lines describe the significance of melanin. Methods for typing blood are given on pages 100 to 103. One method for blood sugar estimation is given on page 108 in ten lines; other methods are described. Methods for estimating blood calcium is given in about seven lines and there follows several paragraphs explaining the significance of calcium. Thus it goes all the way through with different tests. This should be an extremely practical book, and a most necessary one for every physician.

Abortion, Spontaneous and Induced, Medical and Social Aspects, by Frederick J. Taussig, M.D., F.A.C.S., Professor of Clinical Obstetrics and Clinical Gynecology, Washington University School of Medicine, St. Louis; Sponsored by The National Committee on Maternal Health, Inc.; The C. V. Mosby Company, St. Louis, Mo.; 1936; Price \$7.50.

The author says that the scourges that science can conquer have grown in number and to such scourges as typhoid, tuberculosis, and small pox, etc., should be added abortion. He thinks that it is possible to conquer this evil.

The book is divided into 28 chapters and an appendix and bibliography. The titles of some of the chapters are: Abortion in Animals, Anatomy and Physiology of Early Pregnancy, Pathology of Abortion, Etiology of Spontaneous Abortion, Prevention of Abortion, Symptoms and Signs of Abortion, Diagnosis and Differential Diagnosis, Treatment of Abortion, Operative Technique, Extrauterine Septic Infection, Perforation, Other Complications of Abortion, Missed Abortion, Molar Pregnancy, Preventive Measures—Sterilization, Methods and Accidents of Illegal Abortion, Statistics of Abortion, Legal Aspects of Induced Abortion, and Control of Abortion.

The book is freely illustrated and the subject is dealt with in a most thorough and interesting manner.

NEWS ITEMS

The Phoenix Board of Health had special activity during Public Health Week stressing the importance of giving thought to disease prevention. Dr. Hussong, city health officer, gave talks over the radio.

Circle Z Ranch, 17 miles from Nogales, will have a number of rooms available for doctors and their ladies during medical convention at four dollars per day per person. This is one of the finest ranch accommodations in Arizona. Make reservations direct or through Dr. Charles S. Smith, Nogales, Arizona.

C. W. Gerber,
Pres., Las Cruces

NEW MEXICO SOCIETY DEPT.

L. B. Cohenour,
Sec., Albuquerque

PROGRAM

New Mexico Medical Society - - - Carlsbad, May 6, 7, 8

HEADQUARTERS

Crawford Hotel

PROGRAM

Wednesday, May 6, 1936

Opening Session 9:30 A. M.

Crystal Ball Room, Crawford Hotel
Dr. Geo. W. Jones, Clovis, N. Mex., Presiding

Invocation Rev. H. M. Weldon
Address of Welcome Mr. Miers Johnson
Mayor of Carlsbad, N. M.
Response Dr. R. L. Bradley
Ex-Mayor of Roswell, N. M.
Installation of President-Elect Dr. M. B. Culpepper
Carlsbad, N. M.
Presidential Address Dr. M. B. Culpepper
Carlsbad, N. M.
Address Dr. W. W. Bauer, Chicago, Illinois
Address—"Undulant Fever" Dr. Karl Meyer
San Francisco, California

Afternoon Session 2:00 P. M.

Dr. Reginald M. Atwater, American Public Health Association. (Title to be announced).
Dr. Donald H. O'Rourke, Denver, Colorado
"A Consideration of Eye Problems for the General Practitioner."
Dr. Carl Mulky, Albuquerque, N. M.
"Early Diagnosis of Tuberculosis."
Dr. Leslie Smith, El Paso, Texas,
"Atopic Dermatitis and Contact Dermatitis."
Dr. John Moore, Houston, Texas,
"Cancer of the Cervix Problem."
Dr. Willard Cook, Galveston, Texas,
(Title to be announced.)

Thursday, May 7—Medical Section 9:00 A. M.

Crystal Ball Room, Crawford Hotel
Dr. Charles L. Martin, Dallas, Texas,
"Advanced Cancer About the Head and Neck."
Dr. J. W. Cathcart, El Paso, Texas,
(Title to be announced.)
Dr. Ben L. Schoolfield, Dallas, Texas,
"Indications for Open Operation in Fractures."
Dr. E. Payne Palmer, Phoenix, Arizona,
"Emergency Treatment of Fractures."
Dr. Frank Goodwin, El Paso, Texas,
"Low Back Pain."
Dr. A. E. Brown, Mayo Clinic, Rochester, Minnesota
"Clinical Aspects of Jaundice."

Afternoon Session 2:00 P. M.

Dr. John L. Murphy, El Paso, Texas,
"Varicose Veins."
Dr. J. Shirley Swency, Dallas, Texas,
"The Modern Concept of Diabetes Mellitus."

Dr. George Turner, El Paso, Texas,
"Blood Transfusion."
Dr. Clarence B. Ingraham, Denver, Colorado,
"Sterility."
Dr. A. W. Multhauf, El Paso, Texas,
"Practical Points in the Diagnosis and Treatment of Cystitis."
Dr. Fred Standerfer, Lubbock, Texas,
"Allergy—Its Relation to Diseases of the Eye."

BANQUET

7:30 P. M.—Crawford Hotel

After-dinner Speakers to be selected from Visitors.

Thursday, May 7, 1936

Public Health Section 9:00 A. M.

Dr. W. W. Bauer, Chicago, Illinois,
(Title to be announced)
Dr. T. J. McCamant, El Paso, Texas,
"Evaluation of the Cost of Public Health."
Mr. Van Hovenberg, Texarkana, Texas,
"Engineering Phases of Malaria Control."
Representative from Milk Investigations,
"Milk Sanitation."

Afternoon Session

Dr. Reginald M. Atwater, New York, N. Y.
(Title to be announced)
Dr. Karl Meyer, San Francisco, California,
"Meningitis."
Dr. J. R. Earp, Santa Fe, N. M.,
(Title to be announced)
Dr. J. M. Flude, Hollywood, California,
(Title to be announced)
Dr. Frank Kelly, Berkeley, California,
(Title to be announced)

Friday, May 8, 1936

9:00 A. M. Leave Crawford Hotel for Carlsbad Caverns
12:00 Noon Luncheon in Carlsbad Caverns Lunch Room. Round Table Discussion to be led by Guest Speakers.
1:30 P. M. General Meeting of Medical Society and Health Officers for good of the profession, and report of committees. (In the Caverns.)

BUSINESS MEETINGS

Wednesday, May 6, 1936

8:30 A. M. Meeting of Council
9:00 A. M. Meeting of House of Delegates
Thursday, May 7, 1936
1:30 P. M. Meeting of House of Delegates.
Election of Officers.

HOTELS

Crawford Hotel (Headquarters) 101-7 S. Canal St
La Caverna Hotel 211-13 S. Canal St.
Several Modern Tourist Camp Grounds.

GRANT COUNTY MEDICAL SOCIETY

Fort Bayard, New Mexico.

Minutes of meeting held at Silver City, New Mexico, February 28, 1935.

The society convened for a dinner in Silver City at 7:00 p. m., with 10 members present. Following the dinner, the president, Dr. R. C. Lane called the meeting to order. Minutes of the previous meeting were read and approved as read. The following members were appointed as program committee for the year: Drs. N. D. Frazin, David Kramer, and Marcellus McCreary.

The following program was presented: Dr. B. L. Jones reported that the diagnosis of case presented at January meeting by Dr. Colvard of Deming, N. M., was a relapse of typhoid fever.

Dr. A. H. Mann, of Silver City, gave an instructive talk on "State Medicine," giving its historical development from feudal times to the present, and the results from its operation in the various countries where it has been tried. Comments were presented by several members.

Dr. R. E. Watts, of Silver City, presented a detailed clinical report of a child nine years of age, who has had diabetes melitus for several years. Present illness began suddenly with severe epigastric pain and vomiting. During the next three days the patient was critically ill with symptoms of marked shock, together with acute dilation of the stomach, and urinary retention. Treatment consisted of continuous gastric lavage, blood transfusion, insulin and pitressin; patient recovered and left the hospital on the sixth day. This case was generously discussed, the consensus of opinion being that this was a case of acute pancreatitis with acute dilatation of the stomach.

Dr. Parker, District Health Officer, brought up the question of diphtheria immunization and method of handling it by the medical profession. No action was taken. The society adjourned at 10:00 p. m.

(Reported by Dr. B. A. Johnson, Secretary.)

PUBLIC HEALTH NOTES

J. Rosslyn Earp, Dr. P. H.

Director New Mexico State Bureau of
Public Health.

Vaccination

The health officer of the third district recently visited a school at Atrisco prepared to vaccinate all unvaccinated children. Only a handful presented themselves with permission slips from their parents. These were vaccinated. The school superintendent was then notified of the large number of children who had not had permission slips. At once they were excluded from school and on the following Saturday, while the writer was visiting the health department of the third district, his conversation with the health officer was interrupted by a steady stream of small children, mostly accompanied by parents, who had walked all the way from Atrisco to ask for vaccination!

This is how the New Mexico vaccination law works. "It shall be the duty," so runs the statute, "of the school superintendent of each county to see that all children in his county of school age,

are vaccinated against smallpox . . . and it shall be unlawful for any child to attend school or for any teacher to allow such child within any school house unless so vaccinated."

It is not intended that all vaccination be done by the health officer. In fact it is expressly provided that "this vaccination . . . may be done by any licensed physician . . . and shall be paid for by the parents of such children when they are able to do so." Only when the parents are unable to pay is the district health officer required by law to take action.

There are good reasons why much more of the vaccination in this state should be done by our colleagues in general practice. Parents, if the matter is properly explained to them, will usually prefer to have their own doctor. Moreover the child should not have to wait until school age to be protected against smallpox. The proper time for vaccination is in the first year of life. The family physician should see that it is done then as one of a series of immunizations—whooping cough, diphtheria, perhaps scarlet fever, and in some cases typhoid. In the case of smallpox vaccination the doctor will, it is hoped, explain that his certificate of vaccination will be necessary when the child goes to school. He may also recommend revaccination at that time although that is not a legal requirement. On the other hand refusal or neglect to have the child vaccinated renders the parents liable to a fine of \$100.00 or imprisonment in the county jail for 100 days!

Malaria Control Project

The malaria control project is a joint undertaking of the W.P.A., the U. S. Public Health Service, and the State Bureau of Public Health. It operates in 11 New Mexico counties where malaria is more or less prevalent. Colonel C. M. Adams is the engineer in charge and he has just issued an interim report. This shows that by the middle of February drainage of swamps and filling of borrow pits had freed from mosquito breeding areas a population of 68,000 persons. The accepted economic yardstick of measuring the value of this work is three dollars for every 100 square feet of breeding area eliminated. By this measure the malaria control project has already added \$1,620,000.00 to the capital wealth of the state, and besides preventing malaria and giving employment, has returned much valuable land to cultivation and valuable water to useful water courses.

Meeting on March 5 the district health board of the 10th New Mexico district appointed **Dr. Frank W. Parker** as district health officer. This appointment was confirmed by the state board of public welfare on March 10. Dr. Parker is the son of the late Judge Parker of the New Mexico Supreme Court and is a graduate in medicine of the University of Michigan. Last year he took a post-graduate course in public health at Johns Hopkins University.

Dr. L. A. Dewey, who has been acting health officer of the 10th district has been appointed as epidemiologist in the state health department and has moved his residence to Santa Fe. Before taking his C.P.H. at Johns Hopkins Dr. Dewey practiced medicine in Dawson, New Mexico.

The annual meetings of the New Mexico Public Health Association and of the New Mexico Medical Society will be held contemporaneously on May 6, 7, 8, in Carlsbad, New Mexico. Close coordination of the two programs is assured by the fact that Dr. O. E. Puckett is chairman of the program committee for each organization. Among those

who have promised to come from a distance to read papers are Dr. W. W. Bauer from the headquarters office of the American Medical Association and Dr. Karl Meyer of the Hooper Foundation in San Francisco. Dr. J. M. Flude of the American Society for the Control of Cancer has also promised to contribute.

FRANK H. JOHNSON

Dr. Frank H. Johnson, a member of the New Mexico State Board of Medical Examiners, and a resident of Carrizozo, New Mexico, passed away on March 23, 1936, from pneumonia.

C. R. K. Swetnam
President

ARIZONA STATE ASSOCIATION DEPT. D. F. Harbridge
Secretary

PROGRAM

Arizona State Medical Association --- Nogales, April 23, 24, 25

HEADQUARTERS Hotel Montezuma

MEETING PLACE

Scientific sessions will be held in the Esplendor Hotel.

Mrs. J. W. Philips and Mrs. I. H. Shannon will be in charge of Registratoin. These two charming young ladies will greet all with a great big smile.

OFFICERS

President:	
C. R. K. Swetnam.....	Prescott
President-Elect:	
J. D. Hamer	Phoenix
Vice-President:	
C. R. Swackhamer	Superior
Secretary:	
D. F. Harbridge	Phoenix
Treasurer:	
C. E. Yount	Prescott
Councilors:	
H. K. Wilson (Northern District)	Holbrook
J. W. Morris (Central District)	Safford
E. C. Houle (Southern District)	Nogales

COMMITTEES

Committee on Scientific Work:

J. D. Hamer, Chairman	Phoenix
Chas. S. Smith	Nogales
Ralph F. Palmer	Phoenix

Local Committee on Arrangement:

Santa Cruz County Medical Society

Public Welfare Committee:

*W. O. Sweek, Chairman.....	Phoenix
J. D. Hamer	Phoenix
C. E. Yount	Prescott
Meade Clyne	Tucson
* Resigned	

Medical Economics Commi'ttee:

A. M. Tuthill, Chairman	Phoenix
Clarence Gunter	Globe
H. K. Wilson	Holbrook

Medical Defense Committee:

John E. Bacon, Chairman	Miami
R. D. Kennedy	Globe
D. F. Harbridge	Phoenix

Southwestern Medicine:

Orville Harry Brown, Editor.....	Phoenix
Board of Managers	
C. R. K. Swetnam	Prescott
D. F. Harbridge	Phoenix

SCHEDULE OF BUSINESS MEETINGS

Council Meetings

Wednesday, April 22—8:00 P. M.

Saturday Morning, April 25—8:30 A. M.

House of Delegates

Executive Session.....Thursday, April 23, 12:00 N.
Open Session, Election.....Saturday, April 25, 2:00 P. M.

Members of Council

President—Dr. C. R. K. Swetnam.....	Prescott
President-Elect—Dr. J. D. Hamer.....	Phoenix
President-Past—Dr. Meade Clyne.....	Tucson
Treasurer—Dr. C. E. Yount.....	Prescott
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Councilor, Central District—Dr. J. W. Morris.....	Safford
Councilor, Southern District—Dr. E. C. Houle.....	Nogales

House of Delegates

Cochise County	2
Coconino County	1
Graham County	1
Greenlee County	1
Gila County	2
Maricopa County	11
Mohave County	1
Navajo-Apache County	1
Pima County	7
Santa Cruz County	1
Yavapai County	2
Yuma County	1
Members of Council	9
Total	40

PROGRAM

Wednesday, April 22, 8:00 P. M.

THE CANCER COMMITTEE OF THE ARIZONA STATE MEDICAL ASSOCIATION MEETING FOR THE LAITY.

Dr. Charles S. Smith, Nogales—Chairman	
Dr. Orville N. Meland, Los Angeles,	
"Cancer of the Female Genitalia."	
Dr. R. D. Kennedy, Globe,	
"Cancer of the Gastro-intestinal Tract from the Lip	
to the Anus.	
Dr. C. E. Yount, Prescott,	
"Cancer from the Viewpoint of Public Health."	
Dr. C. S. Kibler, Tucson,	
"Cancer from the Internist's Viewpoint."	
Dr. E. Payne Palmer, Phoenix,	
"Cancer of the Breast."	

Thursday, April 23, 9:30 A. M.

invocation—Rev. O. A. Smith Nogales
 Addresses of Welcome:
 Hon. Andrew Bettwy Mayor of Nogales
 Dr. F. T. Hogeland, President, Santa Cruz
 County Medical Society Cananea, Son., Mex.
 Response—Dr. F. W. Butler Safford
 Introduction of President-Elect—Dr. J. D. Hamer
 by Dr. C. R. K. Swetnam Prescott
 President's Address—Dr. J. D. Hamer Phoenix
 Greetings from the New Mexico Medical Association:
 By Fraternal Delegate, Dr. F. D. Vickers Deming
 "Remarks on Leukemia, with Report of a Case of 15
 Years Standing."

Symposium on Tuberculosis, sponsored by Members of
 Federation of American Sanatoria.

Dr. C. A. Thomas, Tucson,
 "Surgical Treatment of Pulmonary Tuberculosis."
 Discussion—Dr. Willard Smith, Phoenix.
 Dr. B. P. Storts, Tucson,
 "Some Problems in Tuberculosis of Children."
 Discussion—Dr. Trevor Browne, Phoenix.
 Dr. Victor Randolph, Phoenix,
 "Early Diagnosis of Pulmonary Tuberculosis."
 Discussion
 Dr. E. F. Gungle, Morenci,
 "Scorpion Stings."
 Discussion—Dr. R. J. Stroud, Tempe.
 Dr. Louis B. Baldwin, Tucson,
 "Sheep Cell Agglutination Test in Infectious Mono-
 nucleosis."

MEMORIAL SERVICES—10 Minutes.

Remarks by Dr. John Flinn, Prescott.
 Prayer by Reverend O. A. Smith, Nogales.
 The Bugler.

HOUSE OF DELEGATES**12 o'clock, Noon****Afternoon Session, 2:00 P. M.****SYMPOSIUM ON MEDICINE**

Dr. Orville Harry Brown, Phoenix.
 "Diagnosis of Early Heart Strain with No Volvular
 Lesions."
 Dr. Zebud Flinn, Prescott,
 Dr. Robert S. Flinn, Phoenix.
 "The Treatment of Heart Failure by the General
 Practitioner."
 Dr. Tom Durant, Tucson.
 "Coronary Occlusion in Young People."
 Discussion opened by Dr. H. J. McKeown, Phoenix.
 Dr. J. R. Lemmon (Guest), Amarillo, Texas.
 "The Problem and Management of the Crying Child."
 Discussion—Dr. C. V. Barley, Tucson.
 Dr. Joseph Bank, Phoenix.
 "Evaluation of Diagnostic Methods in Gall Bladder
 Disease."
 Discussion—Dr. V. G. Presson, Tucson.
 Dr. J. W. Hendricks (Guest), Amarillo, Texas.
 "The Surgical Management of Duodenal Ulcer."

**PROGRAM—EYE, EAR, NOSE AND THROAT
 GROUP.****Friday, April 24—Esplendor Hotel
 8:30 A. M., promptly**

Dr. Robt. C. Martin, Univ. of Calif. Hospital, San
 Francisco, "New Developments in Pathology and
 Treatment of the Ear."
 Dr. Frederick C. Cordes, Chief, Dept. of Ophthalmology,
 University of California, San Francisco, "Management
 and Surgery of Traumatic Cataracts."
 Dr. Isaac H. Jones, Los Angeles,
 "The Prescribing of Hearing Aids."
 Dr. Rea E. Ashley, Stanford Univ. Hospital, San Fran-
 cisco, "The Prevention of Sinus Disease."

Dr. Paul G. Eilers, U.S.P.H.S., Washington, D.C., assisted
 by Miss Ethel Cunningham, R.N., of the U.S.P.H.S.,
 "Trachoma."

Dr. George N. Hosford, San Francisco,
 Dr. Roderic O'Connor, Oooklond,
 "O'Connor Operation for Heterophoria and Heter-
 tropia."

Note: Motion pictures on cataract, O'Connor operation,
 trephine, sacrodyalists, etc., will be shown. These
 pictures are furnished by Drs. Hans Barkan,
 George N. Hosford, Wm. A. Boyce, Charles N.
 Spratt, and John O. McReynolds.

Round-table discussion following luncheon in the
 hotel.

Friday Morning, April 24, 9:00 A. M.

Dr. E. Payne Palmer, Phoenix,
 Film from Dr. Scudder's Clinic, Massachusetts Gen-
 eral Hospital.
 "Emergency Traction for Safe Transportation in
 Fractures of the Long Bones"
 Dr. B. L. Wyatt, Tucson,
 Dr. R. A. Hicks, Tucson,
 Dr. H. E. Thompson, Tucson,
 "Recent Data on Vaccine Therapy in Chronic Ar-
 thritis."
 Dr. C. L. Dunhom, Tucson,
 "A Few Interesting Complications of Atrophic Ar-
 thritis."
 Discussion—Dr. L. B. Baldwin, Tucson, Ariz.
 Dr. Earl D. McBride (Guest), Professor of Orthopedic
 Surgery, University of Oklahoma.
 "Surgical Treatment of Arthritis Joints."
 Dr. G. D. Mahon (Guest), Dallas, Texas,
 "Complications Seen in Thyroid Disease."
 Dr. J. W. Hedrick (Guest), Amarillo, Texas,
 "Intrathoracic Goitre."
 General Discussion.

Friday Afternoon Session, 2:00 P. M.

Dr. Frederick C. Cordes (Guest), San Francisco, Chief,
 Department of Ophthalmology, Univ. of California.
 "Ocular Changes Resulting from Central Nervous
 System Syphilis, and the Administration of Tryp-
 arsimide."
 Discussion—Dr. George N. Hosford (Guest), San
 Francisco.
 Dr. Robert C. Martin (Guest), San Francisco. Univ. of
 California Hospital,
 "The Treatment of Acute Conditions of the Ear."
 Discussion—Dr. Isaac H. Jones (Guest), Los Angeles.
 Dr. Rea E. Ashley (Guest), San Francisco. Stanford
 University Hospital.
 "Relationship of Sinus Infection to General Medicine
 from the Standpoint of the Nose and Throat Spe-
 cialist."
 Dr. Harold F. Whalman (Guest), Los Angeles,
 "Dinitrophenol Cataract."
 Dr. Orville N. Meland,
 "A Clinical Study of Malignant Melanoma: Its Course
 and Treatment."

Saturday Morning Session—9:00 A. M.**INDUSTRIAL RELATIONS COMMITTEE SESSION.**

Chairman, Dr. C. R. K. Swetnam.
 Hon. B. B. Moeur, Governor, State of Arizona, Phoenix.
 "The State, the Industrial Commission, and the
 Medical Profession."
 Dr. C. R. K. Swetnam, Prescott, Chairman of Medical
 Relations Committee.
 "Report of the Industrial Relations Committee of the
 Arizona State Medical Association."
 Dr. W. Warner Watkins, Phoenix, Secretary of Medical
 Relations Committee.
 "Report of the Medical Rating Board of the Arizona
 Industrial Commission."

- Mr. L. C. Holmes, Industrial Commissioner, Phoenix.
 "The Industrial Relations Committee and Medical
 Roting Board; Its Organization, Functions, and
 Value, from a Commission's Viewpoint."
- Dr. Ralph F. Palmer, Medical Advisor to Arizona Indus-
 trial Commission.
 "The Inguinal Trigone—Industrial Considerations."
- Dr. Frank R. Girard (Guest), San Francisco,
 "Injection Treatment of Inguinal Hernia; Indications;
 Technique; 75 Case Reports."
 Discussion—Orville Harry Brown.
- Dr. R. O. Schofield (Guest), Chief Surgeon, Six Com-
 panies, Inc., and President of Nevada State Medical
 Association,
 "Fractures of the Os Calcis."
 Discussion—Doctors, J. M. Greer, A. C. Carlson, and
 J. Lytton-Smith.
- Dr. W. Warner Wotkins, Phoenix. "Anomalous Bones
 of Wrist and Foot in Relation to Injury."
- Dr. Earl D. McBride (Guest), Oklahoma City, Okla.,
 "Methods of Disability Evaluation."
 General Discussion.

ENTERTAINMENT FOR MEN Thursday, April 23rd

- 12:15 P.M. Luncheon
 5 to 6 P.M. Social Hour, Hotel Montezuma.
 5:00 P.M. Cock Fights, Aztec Club, Nogales, Sonora
 7:00 P.M. Smoker and many entertainment features

Friday, April 24th

- 12:15 P.M. Luncheon
 5 to 6 P.M. Social Hour, Hotel Montezuma.
 7:00 P.M. Annual Banquet and President's Ball,
 Cavern Cafe, Nogales, Sonora, Mexico;
 many entertainment features, and the raf-
 fling of many useful and beautiful prizes.

Saturday, April 25th

The International Golf Course will be
 open to all doctors during the convention
 and you are urged to enjoy your golf-
 game as often as you wish. Your badge
 will admit you.

- 5:00 P.M. Special excursion to Guaymas (Old Mex-
 ico) leaves Nogales, 5 p. m., Saturday.

LADIES' ENTERTAINMENT Thursday, April 23rd

- Registration
 Executive Board Meeting
 1:00 P.M. Luncheon
 3:00 P.M. Sight-seeing trip to all points of interest
 in Ambos Nogales.
 5 to 6 P.M. Social Hour, Hotel Montezuma.
 7:30 P.M. Banquet, Cavern Cafe, Nogales, Sonora,
 Mexico, followed by many entertainment
 features.

Friday, April 24th

- Registration
 General Business Session
 10:00 A.M. Visit to Scientific and Commercial Ex-
 hibits.
 11:00 A.M. Annual meeting of the Arizona State
 Medical Auxiliary.
 Address by Dr. Isaac H. Jones, Los An-
 geles, "Medical Aviation."
 Address by Dr. D. R. Gaskin, Phoenix,
 "Medical Aviation."
 1:00 P.M. Luncheon
 2:30 P.M. Business Meeting
 5 to 6 P.M. Social Hour, Hotel Montezuma.
 7:00 P.M. Annual Banquet and President's Ball,
 Cavern Cafe, Nogales, Sonora, Mexico;
 many entertainment features, and the raf-
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5:00 P.M. Special excursion to Guaymas (Old Mex-
 ico) leaves Nogales.

Eye, Ear, Nose and Throat Specialists, Take Notice.

Dr. Roderic O'Connor, arriving in Nogales Wednesday,
 April 22nd, is desirous of having several **squint cases** for
 operation. Any one furnishing a case will be permitted
 to assist Dr. O'Connor. Cases should arrive in Nogales
 not later than noon, April 22nd, and report at the office
 of Dr. Charles S. Smith, where Dr. O'Connor will make
 his examinations. There will be no charge for the op-
 eration, and the hospital expense should not exceed
 \$15.00. Operations will be performed Thursday, April
 23rd. Those having cases are requested to commu-
 cate with Dr. Charles S. Smith, Nogales, Arizona.

Mr. George W. Spratt and Mr. Leonard Manes of the
George W. Spratt Optical Co., Los Angeles, and Mr. Roy
 Ryan and Mr. William Ackerman of the **Superior Opti-
 cal Co., Los Angeles**, will be at the meeting of the Ari-
 zona State Medical Association and will run the motion
 pictures, slides, etc., for the speakers, without charge,
 furnishing the machines and screens.

MANY USEFUL PRIZES

When you register—both men and women—be cer-
 tain to obtain your "commercial exhibitor's card." Take
 this card to each exhibit, obtain the signature of the
 representative, drop the card in the box at the registra-
 tion booth and become eligible for the raffle of several
 beautiful and useful gifts. The raffle will take place at
 the banquet, Friday night, April 24th. Your presence
 at the banquet is absolutely essential in order to par-
 ticipate in the raffle. Gifts have been donated by the
 following firms:

A. S. Aloe Company—a \$25.00 Physician's Bag.

General Electric X-Ray Corporation—a \$40.00 Hot-
 point electric mixing outfit.

Southwestern Surgical Supply Company—a beautiful
 pair of Health-O-Meter bathroom scales.

Philip Morris and Co., Ltd.—Two cartons Philip Mor-
 ris cigarettes.

Cavana Cigar Company—A box of cavana cigars.

The MONTEZUMA HOTEL

has been selected as Headquarters
 for

**THE ARIZONA STATE MEDICAL
 CONVENTION**
Nogales, April 23, 24, 25

Its management wishes to express
 its appreciation for this privilege
 and to inform everyone attend-
 ing of its sincere desire to con-
 tribute to the pleasure of each
 one and we will hold ourselves in
 readiness to conform to your
 wishes.

WIRT G. BOWMAN,
 President

JUNIUS C. LYNCH
 Manager

Bristol-Meyers Co.—A dozen packages of Ipana toothpaste.

Cutter Laboratories—\$25.00 merchandise order.

American Optical Company—a beautiful \$50.00 pair of binoculars.

Kelly's Prescription Shop and Arizona Brace Shop—A nice Cutex and maplewood set.

The Cavern Cafe and Bar—a beautiful hand-woven Mexican serape.

The American Chiclé Company through the kindness of Mr. H. W. Schaaf of Phoenix will keep the ladies and doctors supplied with plenty of their fine flavored gum during the meeting.

Mead, Johnson & Company—a beautiful pair of Opera Glasses.

E. R. Squibb & Sons—a Squibb book of health, which consists of a large box, in book form, containing a varied assortment of Squibb medicine cabinet and toilet products.

COMMERCIAL EXHIBITS

Philip Morris and Co., Ltd., Inc., N. Y. City, manufacturers of Philip Morris Cigarettes, has been studying the effects of smoking on the mucous membrane of the upper respiratory tract. In the booth Dr. L. B. Troxler, a member of the research staff, will explain the work and results obtained. Cigarettes will be distributed and furnished for all social functions during the convention.

Southwestern Surgical Supply Company, Phoenix, Arizona, will have on display a full line of surgical and hospital equipment including McKesson Nargraf gas machine, McKesson oxygen tent; McKesson Metabolor; Kelly Koett Portable Shockproof X-ray machine; Lee De Forest, Burdick and Liebel Flarshiem short wave diathermies; Tompkins tonsil suction machine and Davidson pneumothorax machine—Mr. W. B. Robinson in charge.

E. R. Squibb & Sons, New York, cordially invite the physicians attending the Arizona State Medical Association to visit their exhibit of complete line of Squibb vita-

min, glandular, arsenical, and biological products and specialties, as well as a number of interesting new items. Well informed Squibb representatives will be on hand to welcome physicians and to furnish information on the products.

Mead, Johnson & Co., Evansville, Indiana, will display the percomorphum group of products: Mead's oleum percomorphum, 50% in liquid and in capsule form, and Meads cod liver oil fortified with percomorph liver oil.—Mr. D. O. Tighe in charge.

General Electric X-ray Corporation, Chicago and Los Angeles, will display their portable shock proof x-ray equipment, and their new short wave diathermy, known as the inductotherm, and numerous other items of interest to the profession—Mr. Harry Thuresson in charge.

Lederle Laboratories will exhibit new antitoxins to reduce incidence of reactions; new pollen antigens, and recent parenteral liver refinements—in charge of Mr. Richard C. Scott and Mr. F. S. Dane, Jr.

American Optical Company, Los Angeles, will display their 116 ophthalmometer, otoscope, giant ophthalmoscope, May ophthalmoscope, macula retinoscope, transformer, sight-lite unit and meter, ophthalm-o-graph and metron-o-scope, projecto chart and screen, Robinson-Cohen slide, lensometer and the 589 phoropter—G. J. McLoughlin, C. L. Proctor, J. C. Watts and Stanley Smith in charge.

A. S. Aloe Company, St. Louis and Los Angeles, will display a complete line of surgical instruments and hospital equipment—in charge of Mr. H. H. Hall.

Riggs Optical Company, Los Angeles, will display complete Bausch and Lomb unit, hydraulic chair, green refractor, keratometer, Clason acuity meter, Hamilton slide, Ferry Rand projector, stero campimeter, complete diagnostic equipment, operating lamp, binocular ophthalmoscope, universal slit lamp, and the Wottring rotoscope—Del Squyer, Walter Wood and Harold Harris in charge.

Kelly's Prescription Shop and Arizona Brace Shop, Tucson and Phoenix, Ariz., will display lettering of Kelly's prescription shop and artificial limbs, and several types of orthopedic appliances, including braces, arch supports, various models of surgical garments, supporting belts, trusses and like appliances. Mr. Kelly and Mr. Auger will give practical demonstrations on braces and artificial legs. Mrs. Auger will demonstrate lady's garments and model same if necessary. This exhibit will be unique in that it will give the medical practitioner first-hand information regarding the construction and fitting of the various articles exhibited and the professional pharmacy display of articles used in dispensing.

Stokely Brothers and Company, Oakland, Calif., will display Stokely finest foods, not only for the baby, but the entire family—in charge of Mr. G. C. Pugh.

Cutter Laboratories, Berkeley, Calif., will exhibit their complete line of vaccines, antitoxins, and allied specialties—such specialties as pollen extracts for the diagnosis and treatment of hay fever and the Cutter line of liter saftiflasks of dextrose and other solutions for mass intravenous therapy—in charge of Dr. J. P. Jarks.

Westinghouse X-ray Company, Inc., Long Island City, N. Y., will exhibit their new fluoroscope and ultra short wave generator—in charge of Mr. H. N. Beets.

SCIENTIFIC EXHIBITS

For the 1936 Meeting of the Arizona State Medical Association.

Metropolitan Life Insurance Company, N. Y. City, will exhibit charts showing cancer deaths in the U. S., compared with those from other causes, chances at each age of eventually dying from cancer, chief sites of cancer in men and women, by age groups, trend of cancer death rate by site, by age groups, and curability of cancer in certain sites as reported in recent medical literature. A booklet entitled "Progress in Cancer Control" will be distributed.

American Society for the Control of Cancer, N. Y. City, will have an exhibit of cancer of the uterus and cancer of the skin, with particular reference to mela-

The BOWMAN NOGALES Leading HOTEL

Welcomes the convention of the Arizona State Medical Association. It will be our pleasure to make your stay in Nogales pleasant. An early reservation will assist us in giving you accommodations that will please you.

CHAS. L.
BROWN
Manager

noma, wax models, histories, charts, etc. Moving pictures and slides will accompany the exhibit. There will be a **meeting for the laity** during the convention and this picture will be shown and several addresses delivered. This exhibit is through the courtesy of Dr. E. Paine Palmer, Phoenix, Arizona, who has assumed all expense in securing the exhibit.

Arizona State Board of Health, with Phoenix Indian School, reproduces the exhibit given by the **Wisconsin State Plumbing Board** during the National Public Health Association meeting in Milwaukee. It has been constructed by the Phoenix Indian School. **Community Sanitation Exhibit** of charts and diagrams of the tendency of various communicable diseases in the state. Materials used in the public health education program of the State Board of Health will be displayed. Mr. O. V. Cooper, Assistant State Director of Community Sanitation and Mr. F. E. Doucette, Secretary of the Arizona State Board of Health will be in charge.

Drs. Glenway W. Nethercut and Thomas D. Allen, Chicago, will have an exhibit entitled "First Aid in Eye Injuries," which will consist of charts, pictures, specimens of dangerous toys, stereophotographs, artificial eyes made to represent various pathological conditions, and a demonstration of how to irrigate a baby's eyes.

Dr. S. H. James, Manager, Veterans Hospital, Tucson, Ariz., will have a photographic exhibit of x-rays showing various lung lesions and results of therapy.

The Wyatt Clinic, Tucson, Ariz., will have a series of charts giving graphic data on arthritis.

American Medical Association, Chicago, will have a small exhibit on **tuberculosis**—especially the cutaneous manifestations—cutaneous manifestations of **syphilis**, prevention of **eye injuries, objectionable cosmetics, patent medicine and quackery; vaccines and serums;** and "the doctor prevents disease."

Dr. Hans Barkan, San Francisco, will show the O'Connor operation by motion picture, a description of which is as follows: "Insertion of speculum with rubber dam to prevent contact of sutures with skin; incision of conjunctiva and uncovering of external rectus tendon; grasping this tendon with the forceps and bringing it up into view; buttonholing conjunctiva; sliding scissors under tendon to hold it in place; removal of fascia of tendon so that tendon fibers are exposed; splitting of tendon, O'Connor splitter, wrapping of B and B dermal medium around and over the tendon splits, then tightening of dermal with consequent shortening of tendon to approximate tissues closely; suturing of conjunctiva, then exposure of internal rectus and myomectomy just behind tendon to reduce strength of internal rectus and obtaining temporary paralysis; then suture. Position of eye under anesthesia will be shown."

Dr. Richard O. Schofield, Boulder City, Nevada, will present a number of films of interesting **fractures** cases.

Drs. John E. Bacon and William B. Watts, Jr., Miami, Ariz., will present a number of films of **Silicosis**.

Drs. Soiland, Costolow and Meland, Los Angeles, will

present a number of film transparencies showing various stages of **cancer**, and several **before-and-after treatment series**.

The United States Public Health Service will have an exhibit on **trachoma**. Dr. Paul G. Eilers and Miss Ethel Cunningham of the Service—both highly experienced in trachoma, will be present and will be glad to see any cases of trachoma and discuss them with the attending physicians. If you have a case you wish Dr. Eilers to see, write Dr. Charles S. Smith, Nogales, Arizona, and make the necessary arrangements for presenting your case at the meeting.

Dr. Frank T. Hogeland, Cananea, Sonora, Mexico, will present x-ray films, histories, etc., of **silicosis**.

Pathological Laboratory, Phoenix, Ariz., will exhibit (1) **Configuration and Mensuration of the Heart Shadow**—demonstrating changes in size and shape of the heart produced by various heart lesions; colored films of the chambers of the heart of the normal silhouette in frontal, lateral and oblique views; the changes in configuration and size produced by various types of heart disease; methods of measuring the right and left sides.

(2) **Anomalies of the Spine, Foot and Wrist**—illustrating the dangers of confusing these anomalies with injuries and the difficulty in differentiating them from traumatic lesions.

Dr. John C. Ruddock of Los Angeles will have his scientific exhibit from last A. M. A. meeting of peritoneoscopy, depicting the technic with diagrammatic drawings; statistics of 200 authentic cases with a key for reference to individual cases; half-tone drawings of the pathology seen in the abdominal cavity by this means; special diagram for examination of the female pelvis, and appendix; examination to determine the operability of gastric malignancy; a table of comparative results in abdominal diagnoses using all methods available against peritoneoscopy on the 200 cases cited.

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Clean, Airy Rooms in the
Home-Like Hotel

\$1 and up

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NOGALES

WE PRESCRIBE

REAL WILD GAME DINNERS

FRESH DEEP SEA FOOD

AT

THE CAVERN CAFE

NOGALES, SONORA, MEXICO

● DINE

● DANCE

● BE ENTERTAINED

OFFICIAL ARIZONA STATE MEDICAL ASSOCIATION BANQUET HEADQUARTERS

NO COVER CHARGE

TO THE LADIES

(By Santa Cruz County Medical Society)

DON'T STAY AT HOME when your favorite doctor comes to the Arizona State Medical Association meeting to be held in Nogales, April 23, 24, and 25. This meeting is going to be 'different'. You won't be left sitting in the hotel lobby while he goes to the "wars." You won't have to accept tea and bridge invitations unless you want to. Your time will be interestingly, instructively and amusingly occupied. You will enjoy the business and general meetings of the State Auxiliary. Activity in Auxiliary affairs all over the country has been increasing by leaps and bounds and this may well be a milepost year in Arizona Auxiliary annals. For entire hours you will be thrilled and fascinated by the technical exhibits. Many of you for the first time in Arizona will have an opportunity to thoroughly understand many conditions which you hear of daily. These will be demonstrated by lectures, charts, electrical transparencies and moving pictures.

"Cancer" may be just a word to you now, but here it will be displayed in three separate exhibits, by lantern slides, moving pictures and wax models. "Silicosis" the "white death" of rock-workers, so fantastically headlined in papers and magazines in the last few years, is nothing new to the medical staffs of the great copper mines. Two groups of Arizona men who have made themselves authorities on the subject will tell the true story by word and pictures.

"First Aid in Eye Injuries" will compel interest from all. This exhibit will consist of charts, pictures, specimens of dangerous toys, stereophotographs, artificial eyes made to represent various pathological conditions, and a demonstration of how to irrigate a baby's eyes. A remarkable record in fracture treatment at Boulder Dam is told by a long series of illuminated film. An architectural detail for country homes and camps, immortalized by James Whitcomb Riley and Chick Sale will be exhibited by the Arizona State Board of Health. And a dozen or more other exhibits will not fail to draw your interest in technical exhibits.

The new "social hour" from 5 to 6 p. m., at the Montezuma Hotel is a courtesy from the pharmacists of Nogales. Tea, cocktails, appetizers and hospitality will not be lacking. "Just across the street is Mexico." Mexican art-crafts in surprising variety are available at low prices. The American Customs are liberal in import allowances for bona-fide tourists. You will be identified by your registration badge.

The ladies present at the President's Banquet and Ball will be eligible to participate in a raffle for prizes donated by the commercial exhibitors, aggregating more than \$100.00 in value, including an expensive electric hot point mixing outfit, a beautiful hand woven serape, a fine manicure set, bathroom scales, and others. The men will have their own prize, so you must be present to participate. All that is necessary for you to qualify is to have your registration card endorsed at each and every commercial exhibit booth, and then file your card at the registration desk before the banquet Friday night. The commercial exhibits themselves will merit your attention.

Last, but not least, don't forget the special excursion to Guaymas (Old Mexico). Nogales intends to live up to her reputation for good food and drink, music and entertainment.

SEAN BIENVENDIDOS.

NEWS ITEMS

Dr. E. C. Eaton of Yuma, Arizona, broke into public print because of delivering a 17 ounce baby

boy to a Los Angeles family visiting in Yuma. In spite of excellent care by Dr. Eaton, the baby died.

Dr. R. J. Stroud, of Tempe, in observance of National Health Week, addressed the American Legion Auxiliary of that city, on March 11.

The Indian Bureau, through the Public Works Administration, is constructing a hospital at Yuma for the Indians.

Dr. A. N. Crain of the Maricopa County Public Health Unit is carrying on an educational campaign for elimination of flies and improvement of city conditions in general.

The Basic Science Board of Arizona held an examination during March. Dr. H. L. Shantz, President of the University, has appointed Dr. M. R. Schneck to the Board to take the place of Dr. Jay E. Caster who resigned.

Dr. Junius Rawling, age 70, died of influenza followed by bronchopneumonia with intraaortic thrombus on March 23, 1936, at 10:45 p. m. at his home, 4700 Hastings Street, El Paso. Dr. Rawlings, is survived by his widow, Mrs. Sarah Mott Rawlings, a son, Dr. J. Mott Rawlings, and two daughters, Mrs. Ruth Rawlings Mott and Mary Jeanette Rawlings.

Dr. George Shields of Phoenix, who has been out of practice on account of his health for two or three years, announced that he will again resume practice and has opened offices in the Security Building.

It is announced in the Phoenix newspaper that Dr. E. Payne Palmer has been invited to address the Second International Congress of Scientific and Social Campaign Against Cancer at Brussels, Belgium in September. Dr. Palmer will leave Phoenix by airplane for New York City about Sept. 10 and board a ship for Europe immediately.

Dr. M. I. Leff of Glendale, Arizona, gave a talk on social diseases in one of the boys' classes in high school on March 3.

Dr. P. T. Brown, of Phoenix, was a guest speaker for the Arizona State Nurses' Association on the subject of obstetrics. The meeting was held in St. Joseph's Hospital.

Dr. O. W. Brandon of Pima, Arizona, died February 26, 1936. He has been a resident of Arizona for the past 34 years. He was born in Middleton, Indiana, February 27, 1872. He first located in Naco, then later in Bisbee. Six years ago he moved Safford and recently to Pima. He is survived by his widow; the one son, Dr. W. R. Brandon, died two years ago. Death came after 24 hours of illness, apparently cardiac in origin.

The newspapers report that the United States Circuit Court of Appeals upheld the conviction and sentence of Dr. C. E. DuVall on the charge of selling narcotics. Dr. DuVall was convicted in district court and sentenced to 14 months in prison on the charge of selling narcotics to an addict.

Dr. Frank W. Boville of Prescott is one of the 10 to be elected from Prescott to serve on the Yavapai County Taxpayers Association.

Dr. and Mrs. James E. Drane of Phoenix spent a short vacation in Los Angeles during March.

Dr. Edward Hoehn of Phoenix addressed the Creighton Parent-Teacher Association on the subject of "Child Health," at the March meeting.

Dr. L. Cody Marsh of Oracle, Arizona, according to newspaper accounts accredited to him, believes that the United States House of Representatives needs a psychiatrist; he has announced his candidacy to succeed Mrs. Isabelle Greenway.

Dr. G. H. LaBerge of Peoria, Arizona, addressed the Glendale Lion's Club March 4th.

Dr. D. F. Harbridge, Phoenix, Arizona, spoke April 1, before the Phoenix Hiram Club upon the subject of "The Youth of America."

James J. Gorman
President

SOUTHWESTERN ASSOCIATION DEPT.

Orville E. Egbert
Secy.-Treas.

I appreciate the designation of a section of Southwestern Medicine for the interests and activities of the Association. I am sure I bespeak the feelings of the membership when I express appreciation to the editor, for this opportunity to bring news and activities of the Association to the readers of *Southwestern Medicine* in this manner.

—The Secretary.

Bills for 1936 dues were placed in the mail two weeks ago. The ready response of over 100 members by sending in their checks during the past few days is encouraging. Arizona leads in the number of remittances to date with West Texas second and New Mexico third. Prompt remittances from the rest of the membership will be more than cooperation with the clerical force. It means more for your money in that assurance from the treasury to the program committee means a better and more elaborate November program. The program committee is already at work under the guidance of Dr. E. W. Rheinheimer. The membership committee is also actively in the field under the chairmanship of our President-elect, Dr. Swackhamer.

A Fish Story. The excuse for this story is to urge every man in the Southwest to attend the meeting of the Arizona State Medical Association in Nogales in April. That unique little city, with its sister city of Nogales, Sonora, will extend a hospitality to her guests long to be remembered. But it is a side trip to Guaymas that I am anxious to mention. Your secretary fished in Guaymas three days of February. There were too many fish and they were too big. Dare I mention only one day's fishing: The last day in Guaymas three of us caught eight fish that totaled 1000 pounds in weight. And, now, perhaps, I had best close and at least tell no more stories for a month. Anyhow I am so full of my trip to Guaymas that I can unqualifiedly say it is the greatest vacation I ever had. There is something wonderful in store for the visitors to the Arizona meeting.

Stephen Schuster,
President

EL PASO COUNTY SOCIETY DEPT.

L. O. Dutton,
Secretary

The meeting was called to order by Dr. S. F. Schuster, Feb. 10, 1936, at 7:40 p. m., at the Hotel Dieu Nurses' Home. Minutes of the previous meeting were read and approved.

Dr. R. B. Homan announced that the Board of The City-County Hospital extends an invitation to the El Paso County Medical Society to hold its meetings there.

The order of the program for the evening was changed.

Dr. F. C. Goodwin reported a case of sudden death after a foot injury; general discussion of possibilities of death. Dr. W. W. Waite's autopsy report showed phlebitis of veins of foot and ankle with pulmonary infarct.

Dr. R. B. Homan, Sr., reported a case of dyspnea with death; general discussion of possibilities as to cause of death. Dr. W. W. Waite reported autopsy diagnosis of chronic pulmonary fibrosis, enlarged mediastinal nodes, pyelitis, nephritis, and myocardial hypertrophy.

Dr. Mott Rawlings reported a case of dyspnea

NEWS ITEMS

Dr. and Mrs. John E. Bacon of Miami, Arizona were in Phoenix recently.

The recent suit against Dr. Benjamin Herzberg for \$10,000 in which the jury awarded the estate of the deceased nurse \$250.00 was reopened and a new trial granted.

Dr. J. Madison Greer of Phoenix addressed the Western Regional Conference on Rehabilitation during the conference in Phoenix on the subject of "Cripples and what should and will be done for them."

Dr. B. B. Moeur, Governor of Arizona, has been invited to attend the Texas Centennial celebration this year. The invitation was lavishly engraved and decorated, imprinted in colors with the state seal and the six flags under which Texans have lived, and came directly from Governor Allred.

Dr. R. L. Butler of Clovis, New Mexico, secretary-treasurer of the Curry County Medical Society, died of pneumonia, April 1, 1936. He was born in 1904 and graduated in 1918 from the University of Arkansas. He was licensed to practice in New Mexico in 1929. It seemed that his death was directly attributable to the dust storms in the mid-west. In order to get away from the dust storms in Clovis, he went to Arkansas and on his return he encountered a terrific dust storm which was probably the cause of his developing pneumonia.

Dr. R. J. Stroud, state chairman of the Republican Central Committee, has recently resigned because of lack of time to attend to the duties of the office.

Dr. Marcus Earl Wilson, practicing physician of Phoenix, Arizona, for ten years, died at his home March 29, 1936, following an illness dating back several years. He has been incapacitated for the last several months—confined to his home. It has been known that for several years he has continued his practice in spite of much suffering. Surviving Dr. Wilson are two brothers, George, in Texas, and Ira, in Ohio. Dr. Wilson was an internist of more than average ability and his loss will be keenly felt in Phoenix.

with death. Autopsy diagnosis was congenital hemangioma of lungs.

Dr. W. R. Jamieson presented motion pictures on "The Organization of the Army Medical Corps."

Dr. Maurice Spearman was accepted as a member of the society. Applications of Dr. W. W. Gay, Dr. Shannon, and Dr. McNeen were referred to the censors.

Letter from Sister Agatha relative to the meeting place change was read to the members.

Dr. R. B. Homan, Sr., moved that the question of the meeting place be decided at the next meeting and that the secretary be advised that he include that notice in his next announcements. Meeting adjourned at 9:30 p. m.

The meeting was called to order Feb. 24, 1936, at 7:40 p. m., by Pres. Stephen Schuster at Hotel Dieu Nurses' Home. Minutes of the previous meeting were read and approved.

The program consisted of a symposium on peptic ulcer as follows:

Medical diagnosis and treatment by Dr. J. J. Gorman; discussion opened by Dr. N. H. Keller. Surgical treatment by Dr. F. P. Miller; discussion opened by Dr. J. A. Vance.

X-ray diagnosis by Dr. George Turner; discussion opened by Major Williams of William Beaumont Hospital.

Pathology by Dr. W. W. Waite; discussion opened by Dr. L. O. Dutton.

Dr. Schuster discussed changing the meeting place of the Society, stating that the Sisters of Hotel Dieu wish the meetings there. Dr. R. B. Homan made a motion that the meetings of the El Paso County Medical Society continue to be held at the Hotel Dieu Nurses' Home. Motion was seconded by Dr. Pickett; general discussion by Drs. Jamieson, Vandevere, Turner, and Werley. By a rising vote the motion was passed and the meetings of the society will continue to be held at the Hotel Dieu Nurses' Home.

A motion was made by Dr. Jamieson that the secretary be instructed to write a letter to the Board of the City-County Hospital thanking them for their invitation to the medical society to hold its meetings there but that the invitation could not be accepted at this time.

A committee was appointed to cooperate with the Medical Auxiliary in conducting their yearly medical examinations. The committee consists of Dr. Henry Safford, Dr. R. B. Homan, Jr., and Dr. Robert Thompson.

Meeting was adjourned at 9:45 p. m.

The meeting of the El Paso County Medical Society was called to order at 8:00 p. m., March 9, 1936, by Dr. S. A. Schuster at the Hotel Dieu Nurses' Home.

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N. Y. State Jour. Med. 1935, 35—No. 11,590
Laryngoscope 1935 XLV, 149-154



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Dr. Schultz introduced Mr. C. S. Stocker from the Physicians' Expansion Bureau, New York City. Mr. Stocker outlined a scheme of planned advertising concerning reputable physicians and reputable drugs to be sponsored by and under the name of a local drug firm (Gunning-Casteel). He showed some of his sample advertisements the text of which was ethical and which had been ok'd by the American Medical Association. He asked for the approval of the El Paso County Medical Society to such a series of advertisements. Dr. Laws moved to approve the plan. This was seconded by Dr. Robert Thompson and the motion passed unanimously.

The scientific program was as follows: Dr. F. O. Barrett read a paper on "Cyclo-Propane—The New Gas Anesthetic." Dr. H. T. Safford read a paper on "Cyclo-Propane and Its Relation to Other Anesthetic Agents." Papers were discussed by Drs. James Vance, Robert Homan, Frank Schuster, Leighton Green, Paul Gallagher, Stephen Schuster and F. O. Barrett.

The application for membership of Drs. W. W. Gay and Hugh M. Shannon were reported favorably from the censors and these doctors were accepted as members by a unanimous vote. The application of Dr. D. D. McNeen was reported unfavorably by the censors and a motion not to accept his application was made, seconded and passed.

A letter from Mr. Paul Henderson was read inviting the Society to appoint a committee to inspect the local WPA project. Dr. Schuster appointed Drs. C. F. Rennick, S. D. Swope and Clay Gwinn to act as the committee.

A letter was read from the Arizona State Medical Association inviting the El Paso doctors to their annual meeting in Nogales. Motion was made by Dr. R. B. Homan, seconded and passed that the secretary acknowledge the letter from the Arizona Society.

Meeting was adjourned at 9:50 p. m.—L. O. Dutton, M. D. Secretary.

ARIZONA PUBLIC HEALTH ASSOCIATION NINTH ANNUAL MEETING, TUCSON, ARIZONA, APRIL 20, 22, 1936.

President—Dr. A. N. Crain, Director of Maricopa County Health Service, Phoenix.

Vice-President—Lydie Pothoff, R. N., Nogales.

Second Vice-President—F. C. Roberts, Jr., State Sanitary Engineer, State Board of Health, Phoenix.

Secretary-Treasurer—Marion E. Stroud, State Bacteriologist, Arizona State Laboratory, Phoenix.

Executive Committee—Dr. A. N. Crain, Phoenix; F. C. Roberts, Jr., Phoenix; J. L. Black, Phoenix; Lydie Pothoff, Nogales; C. N. Boynton, Phoenix; M. R. Tillotson, Grand Canyon; Marion E. Stroud, Phoenix.

Program Committee—L. H. Howard, M.D., Tucson; Dario Travaini, Phoenix; Ben Mathews, Prescott; Ruth McGregor, Bisbee; Marion E. Stroud, Phoenix.

Local Arrangements—L. H. Howard, M.D., Chairman, Tucson.

Monday, April 20, 1936

9:00 A. M.—Registration: Mezzanine, Santa Rita Hotel.

10:00 A. M.—Short School for Water Works and Sewage Plant Operators and Dairy Inspectors, Dr. Robert A. Greene, Tucson, presiding.

Tuesday, April 21, 1936—9:00 A. M.

General Session: Dr. A. N. Crain, President of the Arizona Public Health Association, Phoenix, presiding.

Invocation: Rev. E. C. Huntington, Tucson.

Address of Welcome: President of Chamber of Commerce.



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"Changing Attitudes on Health Education in Schools," H. E. Hendrix, Superintendent of Public Instruction, Phoenix.

"Recent Trends in Chlorination," W. O'Donnell, Research Engr., Wallace and Tiernen, Los Angeles.

"What To Expect of the Laboratory," Dr. Robert A. Greene, Director, Arizona State Laboratories, Tucson.

"The Time Factor in the Laboratory," C. N. Boynton, Pathological Laboratory, Phoenix.

2:00 P. M.

"Public Health Engineering Laws for Arizona," F. G. Roberts, Jr., State Sanitary Engr., Phoenix.

"Sanitary Aspects of WPA Work," W. J. Jamieson, State Administrator of the Works Progress Administration, Phoenix.

"International Boundry Sanitation Progress of the Environmental Sanitation Committee of the A. P. H. A.," Jane H. Rider, Director, National Youth Administration, Phoenix.

"Social Security Act," Dr. Fred T. Foard, U.S.P.H.S., Acting Surgeon, San Francisco.

"Maternity and Infant Work in Arizona," Edith Sappington, M. D., Regional Consultant, San Francisco, California.

"Child Welfare and Crippled Children Work in Arizona Under the Social Security Act," Florence M. Warner, Sec., State Board of Public Welfare, Phoenix.

"Health Protection for the Salt River Valley," Dr. A. N. Crain and B. N. McMorro, Maricopa County Health Service, Phoenix.

6:30 P. M.

Dinner and Annual Meeting of the Arizona Public Health Association.

"Public Health in Relation to Secondary Schools," David B. Treat, Health Department, Phoenix Union High School, Phoenix.

Entertainment: by local committee.

Wednesday, April 22, 1936—9:00 A. M.

Health Officer's Session: Dr. George C. Truman, State Superintendent of Public Health, Phoenix, presiding.

"Control of Measles with Human Placental Extract," Richard Scott, branch manager, Lederle Laboratories, Los Angeles branch (with exhibit).

"Control of Scarlet Fever," Homer N. Calver, Secretary of Cup and Container Institute, N. Y.

"Sanitation and Public Health," O. V. Cooper, Asst. Director, Community Sanitation Project, Phoenix.

"Silicosis and Tuberculosis," Dr. C. A. Donaldson, Assistant County Physician, Tucson.

Discussion of same, Dr. S. Watson, Watson and Clyne Clinic, Tucson.

9:00 A. M.

Public Health Nurse's Section: Mrs. Ruth McGregor, R. N., Section Chairman, Bisbee, presiding.

"Supplying Community Nursing Needs," Anna F. Hiesler, R. N., U. S. P. H. S., San Francisco, Calif.

"Hygiene for Unemployed Women," Beth Woolfolk, R. N., Tucson.

"The Preventorium," C. E. Goyette, Executive Secretary, Pima County Welfare Board, Tucson.

Discussion of same, Vera B. Thomas, ERA, Tucson.

Round Table Discussion, George A. Hays, M.D., Director of Local Health Administration, State Board of Health, Phoenix. Questions for discussion in the Round Table should be mailed to Miss Marion Stroud, Secretary, State Building.

Dairy Inspector's Section: J. L. Black, State Dairy Commissioner, Arizona State Building, Phoenix, presiding.

"The Production and Consumption of Dairy Products in Arizona," R. N. Davis, Associate Dairy Husbandry, U. of A., Tucson.



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"Milk Supply and Control for State Institutions," Chester F. Deaver, City Milk Inspector, Flagstaff.

"Trends in Milk Control," Rowell A. Smith, Community Sanitation, Tucson.

"Bang's Disease," Dr. C. T. Guilfoyle, State Veterinarian, Arizona State Building, Phoenix.

12:30 P. M.

Luncheon and Annual Meeting for Dairy Inspectors.

9:00 A. M.

Engineering Section: Dario Travaini, Supt. of Sewage Treatment Plant, Phoenix, presiding.

"Hydraulic Calculations of Distribution System," Richard Bennett, City Water Supt., Phoenix.

"Distribution System Maintenance," Phil Martin, Water Superintendent, Tucson.

"Valve and Hydrant Maintenance," L. R. Burch, Asst. Superintendent, Water Department, Tucson.

"Copper Services," R. Kline, City Engineer, Prescott.

"The Chemical Treatment Plant of El Paso," N. T. Veatch, Black and Veatch, Consultant Engineers, Kansas City, Missouri.

12:30 P. M.

Luncheon and Annual Meeting of the Arizona Sewage Association, Pioneer Hotel, Tucson.

"Initiation of Chemical Treatment in Arizona," John A. Carollo, Consultant Engineer, Phoenix.

2:30 P. M.

Health Officer's Section: Dr. L. H. Howard, Program Chairman, Tucson, presiding.

"Sea Foods in Relation to Arizona," Dr. R. W. Hussion, City Health Officer, Phoenix.

"The Significance of Heart Murmur in School Children," Dr. W. R. Leverton, U. S. Veteran's Bureau, Tucson.

"Tuberculosis in Childhood," Dr. C. A. Thomas, Thomas-Davis Clinic, Tucson.

"Arizona and Tuberculosis," Dr. George A. Hays,

Director of L.H.A. State Board of Health, Phoenix.

Public Health Nurse's Section: Helen Bocock, R.N., U. of A. Infirmary, Tucson, presiding.

"Mental Hygiene," Mrs. Riffle, R.N., State Hospital, Phoenix.

"Vitamins," Carolyn S. Whiting, R.N., Maricopa County Health Service, Phoenix.

Round Table Discussion of papers.

Dairy Inspector's Section: Ben Mathews, City Milk Inspector, Prescott, presiding.

Subject to be announced, W. B. West, Asst. Bacteriologist, Arizona State Laboratory, Tucson.

"The Dairy Industries' Viewpoint of Milk Control and Dairy Inspection," Don L. Welsh, Mission Dairy, Phoenix.

Open Discussion of Milk Legislation and Its Application.

Inspection tour of dairies and plants around Tucson.

Engineering Section: R. Kline, City Engineer, Prescott, presiding.

"The Milk Supply of a City," P. E. Mauzey, City Dairy Inspector, Phoenix.

"Sterilization of Small Water Supplies," John W. Ladlow, Representative of Southwestern District, Proportionate Inc., Phoenix.

"Methods for Testing for Chlorine," A. L. Frick, Jr., Dist. Manager, Wallace and Tiernen, Los Angeles, California.

"The General Electric Kitchen Waste Unit," L. B. Shreve, Arizona Representative of T. Baucier Co., San Diego, California.

"Cross Connections," W. E. Collins, Sanitary Engr., for Dist. Health Unit of the Counties of El Paso.

"Five Years Public Health Engineering in Tucson and Pima County, and Public Health Survey," George Marx, Sanitary Engineer, Tucson.

Program is subject to change.



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10:00 A.M.	Breast	Breast	Bottle	Bottle
2:00 P.M.	Breast	Bottle	Bottle	Bottle
6:00 P.M.	Bottle	Bottle	Bottle	Bottle

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SOUTHWESTERN MEDICINE

(REGISTERED U. S. PATENT OFFICE)

VOL. XX.

MAY, 1936

No. 5

OFFICIAL ORGAN
of the
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ARIZONA STATE MEDICAL ASSOCIATION
EL PASO COUNTY (TEXAS) MEDICAL SOCIETY
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Southwestern Medicine

PUBLISHED MONTHLY

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*Martenstein, H.: Syphilis Treatment: Enquiry in Five Countries. *League of Nations Quart. Bull. Health Organ.*, 4: 129, 1935.

CANNED FOODS AND THE PUBLIC HEALTH

IV. BOTULISM

• Several of our readers have inquired as to the possibility of botulism resulting from the consumption of commercially canned foods. The canning industry is proud of the part it has played in the eradication from its products of this deadly type of food intoxication. We are glad to devote this space to a discussion of this important topic.

During recent years, the daily press periodically carries reports relating how one or more members of a family, or of a group of persons, were stricken after a meal, usually with fatal results. Sometimes these accounts describe how an "anti-toxin" was rushed to the scene—an indication that botulism was involved. These press reports often include the statement that a "canned food" was incriminated as the cause of the illness.

We wish to emphasize that as far as the records go, these outbreaks without exception are not attributed to foods commercially canned in this country. In practically every instance, it was found that the foods—usually of a non-acid or semi-acid nature—had been preserved at home by the use of inadequate heat sterilization processes (1). These press reports, by not stating correctly the type of food involved, have done much to cast unwarranted suspicion on commercially canned foods as possible causes of botulism.

Botulism, or acute toxemia due to *Clostridium botulinum*, is by no means a new affliction. As early as 1802—ninety-five years before van Ermengem discovered the true cause of the intoxication—warnings were issued against botulism. However, not until severe outbreaks occurred in this country some fifteen years ago, was it realized that cognizance should be taken of the fact that

foods canned by the methods used in those days could become contaminated with the toxin of this organism. This fact having been realized, the canning industry took immediate steps to prevent such contamination of their products.

Research was inaugurated and has been continued to which the industry has contributed not only financially, but also by the studies of scientists associated directly with the canning industry (2). The end result of these researches was the development of scientific methods of determination of heat sterilization treatments, or heat processes as they are known to the industry, which would be adequate to insure the safety of canned foods from the standpoint of botulism (3).

The effectiveness of the measures generally adopted by the canning industry of the United States is evidenced by the fact that no case of botulism attributable to an American commercially canned food has occurred during the past ten years (1a). Foods packed in commercial canneries are heat processed not only to insure protection from bacterial spoilage causing merely the loss of the food, but to render them safe from the standpoint of botulism, as well. In fact, a sterilizing process sufficient to insure the destruction of the most heat resistant strain of *Cl. botulinum* ever isolated is considered the minimum requirement of heat treatment of commercially canned foods. The National Canners Association has issued lists of scientifically determined processes for non-acid canned foods with which canners comply (4).

Such are the facts. The American canning industry offers its products to the consuming public for what they are; namely, wholesome and nutritious foods.

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1. a) 1935 Amer. J. Public Health, 25, 301
b) 1935 J. Amer. Diet. Assn. 11, 18

2. 1926 J. Bacteriology 31, No. 1 P. 71
1929 Amer. J. Public Health, 13, 108
1925 J. Inf. Dis. 31, 650

3. 1925 Natl. Res. Council Bulletin, 7, No. 37

4. 1937 N.C.A. Bulletin 26-L, Revised

This is the twelfth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



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VOL. XX.

MAY, 1936

No. 5

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SOCIAL-MEDICAL RELATIONSHIP

J. D. HAMER, M. D.
Phoenix, Arizona

(President's address, Arizona State Medical Association, Nogales, Ariz., April 23, 1936.)

I may not speak of many things expected of an incoming president. To elaborate fully, however, upon the many problems confronting the medical profession of our state and nation at the present time would be entirely too time-consuming in view of our full program for this meeting. A few fundamental situations, however, are of sufficient importance to warrant our consideration, and to these your attention is directed.

Today, as we all know, the most important problems in our profession are concerned with social relationships. Many complications have greatly upset our previous methods of proposals in the matter of sick and health care; the various aspects of rapidly changing social forces, and the committees appointed by high governmental officials, foundations, and even many individuals bombarding our system of medical practice have caused such chaos in the minds of everyone that none of us at the present time knows where we are going. Nor is the solution in sight.

There are many during the past two to three years who have advocated profound changes in the existing forms of medical practice. Many and varied have been the methods suggested, the most outstanding being proposals leading to state medicine, socialized medicine, or compulsory sick and health insurance. Our national organization has been studying the subject from every conceivable viewpoint, but up to the present, has been unsuccessful in checking the avalanche of propaganda dealing with these proposals. Nor has it been able to

find the proper solution. It has, however, passed resolutions which are thought to be the wisest guiding formulae for each state or county medical unit to use in adoption of policies and plans for future action.

We have been accused during the past few years of being impolite, yes, even almost unapproachable, in matters vitally associated with economics. We are accused of being uncooperative, while tons of literature, and millions of words have passed over radio, through the press, or from public platforms, relative to this subject. We are receiving new theories, regardless of our willingness to accept them, or of our ability accurately to evaluate them. And it is not surprising that a profession which has always taken a conservative attitude against change should resist vigorously. We should not be condemned if we view some of the proposed social changes with skepticism, especially those proposing collectivization or regimentation of our members, in view of the fact that our relations to society have evolved over a long period by natural evolution.

Notwithstanding all this, however, this particular annoying agitation may have served one useful purpose. It has irritated a semi-ethargic profession sufficiently to cause an awakening as to its responsibilities in its relations to impending social upheavals. We sincerely believe that we owe the public our best endeavors in trying to find the solution of these perplexing questions. We must abandon a negative, non-interference attitude and adopt a militant code. We must resist by vocal exclamation and confirmed united action these enticing schemes which, upon analysis, harbor elements of medical retrogression. We should believe that we can provide adequately for all groups of society who have the will to be helped. We must continue to resist those who would take advantage of a temporary economic situation to compel social changes of far

reaching importance which should only be effected by the slow but safer method of gradual evolution. We must continue with our best in repudiating the offensive actions being attempted by non-medical meddlers who have assumed such superior knowledge in what is best for the people in the matter of medical care.

As a basis for a start in the right direction, let me suggest that we consider our local county medical societies, and emphasize the importance of selecting officers and committee members who are thoroughly interested in the many activities which each society should pursue. There is much work to be done. First of all there should be a concerted effort to enlist all eligible physicians in our societies; it is only through concerted action that the problems which vex the profession can be solved. There is need for strong economic committees, inasmuch as the county medical societies must take the lead in working out the local needs connected with indigent care, the investigation of plans for the care of the low-income groups, and the planning of ways and means of combating proposed substitutes for present medical care which seem altogether unwise. These committees should study all factors involved in the present day maze of conflicting interests, analyze divergent viewpoints, and decide upon a rational basis for action. It must help formulate plans for the future, and evolve policies which will be the basis on which the social and economic structures vitally associated with the medical profession will be erected.

During the coming year, also, strong committees on public relations and legislation should be created, so that proper recommendations can be made upon proposed legislation affecting our profession.

Last, but not least in importance is the part that each of us can play with the proposals at hand, and to help mold and crystallize public opinion especially on the subject of state medicine. We must lead the way to a rational middle ground, if a change is to be made in the setup of established methods of handling the sick. We can all assist in working out modifications acceptable for the greatest good of all concerned.

At the present time, throughout the land, many state and county societies, in anticipa-

tion of changing developments in this whole business of medical care, are working on plans for their own communities. In general, although no universal master plan has as yet been devised suitable for the nation as a whole, these programs have the common purpose of extending adequate medical care to large numbers of patients on a flat fee or prepayment basis. The main difference between these plans, and those advocated by many social workers and foundations is that the major control is in the hands of local medical societies and not under the domination of politicians. We know that politics and medicine will not mix, and should constantly re-affirm our opposition to proposals leading to political control.

Public welfare problems of immediate interest pressing for consideration are embraced in the social security act. Some of the provisions of this act are administered under the department of health, or of education, or state welfare board; the provisions which deal with child welfare, the crippled children and the aid to the blind intimately concern our profession. Under this act, any state may elect any one or all of the provisions, but the social security board makes certain mandatory regulations governing the operation of chosen plans within each state. Chiefly among these are: (1) State financial participation; (2) the selection of a single state agency to administer the act; (3) the act must be uniformly effective in all political subdivisions of the state. In other words, the provisions of the act must be carried out in every county of the state. So far as Arizona is concerned, it is in a fortunate position with respect to these regulations inasmuch as it has revenue available from the luxury tax with which to meet such financial obligations. It also has a well-organized administrative agency in the board of public welfare. At the present time Arizona has four programs under the social security act which have been submitted to and approved by the social security board in Washington. Both federal and state funds are at hand for the first quarter of 1936 and those allotted for the aid of dependent children are already being disbursed. The crippled children, child welfare services, and aid to the blind programs will be in effect within the next two weeks. The program for dependent children, and child wel-

fare services will be administered by welfare and social workers.

An estimated 1200 crippled children will benefit in this state. These are in the indigent and low income groups. The main objectives will deal with locating the crippled children, providing adequate home care, supervision, educational facilities, examinations in diagnostic clinics, hospitalization, and treatment by pediatricians and orthopedists. The activities in this work will be under the supervision of 15 lay and professional members known as an advisory board, and composed of medical men, representatives of service clubs interested in crippled children's work, Shriners, and others. Clinics will be conducted in various portions of the state for examinations and recommendations.

Under the section sponsoring aid to the blind, it is estimated that 250 adults will get assistance. The act restricts the work to, males 21 years or over and, females 15 years or over, who, to gain relief status, must be certified as having less than 20/200 vision. The main object of this portion of the act is to encourage corrective surgery.

Therefore, in a consideration of the foregoing facts, it seems that we are confronted with problems pressing for solution. I bring the matter before you in the hope that, it will be appraised thoroughly and, whatever course of action adopted, will represent the will of the entire state society. Policies must be determined at this meeting as to our relation or cooperation in the administration of certain sections of this social security act, remembering too, that the same act, sets up a social security board whose functions are wide. One of its duties is to explore the possibilities, and report to Congress its conceptions, of compulsory health insurance.

If we believe that we should adopt policies relative to this act, let us adopt them as a unit state-wide, and delegate constituted authority to a proper committee, with the power to act for the association. It would be a mistake for any individual or county society to go ahead on his or its initiative in making decisions of such vast importance. We must integrate our state association to act as a unit, and all should abide by the decisions reached by our House of Delegates. We should remember the principles laid down by our national judiciary

committee in considering matters of social-medical relationships.

By bearing the importance of united action in mind and by pursuing an unselfish, impersonal procedure, the best interests of the public and of the profession may well be served to the benefit and satisfaction of all concerned.

THE CARDIOVASCULAR SYSTEM IN RELATION TO SURGERY

VERNE C. HUNT, M. D.
Los Angeles, California

(Presented before the Southwestern Medical Association, El Paso, November 21-23, 1935.)

The immediate risk of surgical operations, though many factors may be concerned, depends upon the cardiovascular system and the intensity of variations in it during the operation. Certain postoperative cardiovascular conditions and accidents, mar what might otherwise constitute normal convalescence, definitely contribute to certain failures of recovery, and not infrequently are entirely and solely responsible for death.

The urgency of a surgical procedure may be such that an unfavorable cardiovascular system must be accepted. On the other hand, when the urgency for operation is not great, much may be done to improve the cardiovascular system and thereby materially reduce the risk of operation. Variations in the circulatory system during an operation are not entirely beyond control, and certain postoperative measures may be instituted to minimize the incidence of cardiovascular and circulatory accidents.

Preoperative knowledge of the cardiovascular system is important, not only in the selection of the type and method of inducing anesthesia, but it also aids the surgeon in determining the magnitude of the operation which may be performed with relative safety within the appraised cardiovascular reserve.

Cardiovascular disease does not necessarily prohibit surgical procedures unless cardiac decompensation has occurred from organic or congenital heart disease. Certain types of cardiovascular disease may legitimately cause one to pause and carefully consider the evidence for and against the advisability of an

elective operation when the life expectancy of the patient may quite properly be the deciding factor against operation. It is worthy of repetition and emphasis that in the presence of serious cardiovascular disease, even though the circulatory system is fully compensated, life expectancy should receive due consideration when contemplating any elective operation. This is particularly true with coronary disease clinically manifested by occlusion or anginal seizures. Advanced hypertensive cardiovascular disease, characterized by retinal hemorrhages or marked renal changes, may not have sufficient life expectancy to justify an optional or elective operation. These statements have no reference to total thyroidectomy for relief of various forms of heart disease, nor do they bear upon operation on the sympathetic nervous system to provide relief from angina pectoris, or in reducing hypertension.

The blood volume, and the condition of the blood, may influence materially the risk of a surgical procedure. In acute anemia, brought about by massive hemorrhage from a peptic ulcer or ectopic pregnancy, the risk is great if the blood loss has not been compensated by blood transfusion. On the other hand, in patients with chronic secondary anemia developed over a period of months from loss of blood from uterine fibroids, compensation within the cardiovascular system has occurred so that even with a secondary anemia of the same degree as that present in the acute massive hemorrhage, the risk of operation from the standpoint of the cardiovascular system is not nearly so great as in acute anemia.

Anesthesia and the Cardiovascular System:

The risk of major surgical procedure is greater in cardiovascular disease than with a normal cardiovascular system. It is also well known that age, stature, state of nutrition, and occupation are all vital factors with profound influence on the reserve in the circulatory system. A young individual possesses a more resilient circulatory system than does an aged person and consequently has a more effective compensating mechanism to the variations within the circulatory system incident to anesthesia, the magnitude of the operation, loss of blood, and so forth. From the standpoint of the cardiovascular system, the risk of major operations is greater in the short, stocky, obese individuals than in those of normal stat-

ure and weight. There is also much to suggest that the individual whose daily occupational routine subjects him to mental and physical strain and stress possesses a cardiovascular system not as able to withstand the additional burden of a major surgical procedure as that of the individual whose occupational duties are light.

Inasmuch as vasomotor tone and blood flow are of importance in maintaining equilibrium within the cardiovascular system, the effect of anesthetic agents is of utmost importance, particularly in patients with cardiovascular disease. Vasomotor tone is of great importance in maintaining an adequate blood pressure and in regulating the flow of blood to the capillary beds, in accordance with their needs under various conditions. It has long been accepted that changes in the vasomotor system occur during general anesthesia, but the magnitude of those changes was not realized until Herrick, Essex and Baldes, in 1932, discovered by accident that surgical anesthesia (with ether) practically abolishes vasomotor tone.

Through a modified method of measuring blood flow, recently developed by Rein, a German physicist and physiologist, Mann found that in the experimental animal it required from two to three hours for vasomotor tone to return to normal after withdrawal of the ether following surgical anesthesia. Mann has furthermore observed in the experimental animal under ether that the blood flow in the peripheral blood vessels is variable depending upon the depth of anesthesia. The maximum increase in the blood flow occurred during light ether anesthesia attributable, it was thought, to a decrease in vasomotor tone without affecting blood pressure. During deep anesthesia, even though blood flow was increased, it was not increased as much as under light anesthesia, due to depression of blood pressure and vasomotor tone.

The cardiovascular system is designed to convert the pulsating blood stream into a steady flow through microscopic blood vessels. Since the vasomotor system is of importance in maintaining adequate blood pressure and in regulating the flow of blood to and through the various capillary beds, any disturbance of vasomotor tone must influence the circulation. Every agent producing surgical anes-

thesia and every major operation requires considerable adjustment of, and compensation by, the physiologic mechanism of the patient, in whom the circulatory and respiratory mechanisms are most important. The adjustments which these mechanisms must undergo are not only dependent upon the anesthetic, but also upon the magnitude and duration of the operation, and the part of the body which is operated upon. The patient with a normal cardiovascular system and in good general condition operated upon the extremities, or for the most common intraperitoneal lesions, usually exhibits few manifestations during the operation or afterwards of the adjustments that have occurred incident to anesthesia and operation. In surgical procedures of great magnitude, including resection of gastric and intestinal lesions, intrathoracic operations, and operations upon the brain and spinal cord, fluctuations within the cardiovascular system often occur abruptly and poor compensatory power is frequently manifested. Likewise, the operations of several hours' duration often exhaust the compensatory mechanism of the circulation even though loss of blood is not a factor. Continued or sudden loss of the circulating medium rapidly produces changes within the cardiovascular system for which compensation may occur without serious clinical manifestations. However, bleeding of any considerable amount usually produces rapid cardiovascular failure by abrupt depression of the blood pressure.

Unquestionably inhalation surgical anesthesia profoundly disturbs the compensatory mechanism of the cardiovascular system in operations of considerable magnitude and length, particularly when there has been coincident loss of the circulating medium. While this has long been recognized, it is only recently that the clinical phenomena incident to disturbed compensatory mechanism could be explained through the physiologists' observations that the vasomotor tone is markedly decreased or practically abolished during deep ether anesthesia. Unquestionably the method of administering a general anesthetic has much to do with the disturbance that occurs in the compensatory mechanism during surgical anesthesia. It often has been shown by experimental and clinical investigation that repeated and prolonged cyanosis exerts a profound de-

leterious effect upon the circulatory system and greatly jeopardizes the cardiac reserve.

In many operations where experience has proved that the general inhalation anesthetics markedly depress the cardiovascular system, the substitution of local and regional anesthesia has provided a more uniform maintenance of the compensatory mechanism of the cardiovascular system. Furthermore, the elimination of the depressant effect of deep surgical anesthesia has facilitated early recognition of disturbances in the compensatory mechanism of the cardiovascular system as they may occur incident to or due to the surgical procedure, or to loss of the circulating medium without having those clinical manifestations masked by or confused with the circulatory changes incident to or due to the inhalation anesthetic.

The proper anesthetic is of utmost importance in patients with cardiovascular disease; inhalation anesthetics are not necessarily contra-indicated. Chronic valvular heart disease in which the circulation is fully compensated and hypertensive heart disease, in which the hypertension is not characterized by serious changes in the eye grounds or kidneys, tolerate remarkably well competently administered general inhalation anesthetics for operations of less than an hour's duration and without undue loss of circulating medium. There is little evidence that the risk of such surgical procedures is greater under general anesthesia than under local or regional anesthesia. A definitely greater risk is assumed in operations of unusual magnitude or prolongation, when difficulties in the administration of an inhalation anesthetic are encountered, when repeated or prolonged cyanosis complicates the administration, or when an undue amount of circulating medium is lost during the operation.

Although the physiologist has observed that the vasomotor tone returns to normal within two to three hours after withdrawal of the ether following surgical anesthesia experience has proved that in prolonged operations of considerable magnitude, this interval is often much longer. While the volume of blood flow is not necessarily dependent upon a uniformly maintained blood pressure, a fluctuating blood pressure during operation is indicative of a disturbance in the compensatory mechanism

and a rapidly declining blood pressure indicates marked changes in the volume of blood flow, with a rapidly failing compensatory mechanism. Such phenomena have been observed in operations of considerable magnitude in the absence of undue loss of the circulatory volume. The body can quickly compensate for relatively large losses of circulatory volume and maintain an effective blood pressure and flow of blood to the medullary centers.

The surgeon's knowledge of the status of the cardiovascular system during the course of an operation is best obtained through frequent readings of the blood pressure by the anesthetist. While the pulse rate and its character are important, the blood pressure curve is more informative. Progressive or sudden decline of the systolic blood pressure to or approaching 50 per cent of the preoperative systolic pressure is an ill omen and indicates a rapidly failing compensatory mechanism. When such failure occurs in the absence of loss of circulatory volume, resuscitating measures often are of little avail.

Circulatory Volume Substitutes: In the presence of circulatory depression during or following a prolonged operation or one of considerable magnitude, treatment should be instituted before the compensatory mechanism has failed. Such treatment includes withdrawing the anesthetic if it is an inhalation agent, placing the patient in a position most favorable to increasing the flow of blood to the medullary centers, supporting the blood pressure, and replacing lost circulatory volume.

The posture of the patient with failing circulation during an operation has a great deal of bearing on the flow of blood, particularly to the medullary centers. The observation frequently has been made in the operating room, when a failing circulation appears, that dropping the head of the patient lower than the remainder of the body materially aids in sustaining blood pressure unless the cause of the circulatory failure is uncontrolled hemorrhage. These observations are corroborated by Mann who found in the experimental animal under ether anesthesia, that the flow of blood through the carotid artery in the head-down position increased about 30 per cent over that of the animal in the horizontal position. However,

when the animal was placed in the head-up position the flow of blood was decreased almost 30 per cent as compared with that of the animal in the horizontal position.

For the purpose of sustaining a declining blood pressure during an operation, a number of procedures are available and their effectiveness is usually dependent upon the causes of a failing circulation or disorganized compensatory mechanism. I have observed little benefit from stimulating agents except in the marked decrease in blood pressure following intraspinal anesthesia, in which ephedrine has been most useful, and often has sustained adequate pressure. The loss of body fluids during prolonged operations under general anesthesia may be enormous and often is responsible, in the absence of undue loss of blood, for declining blood pressure and manifestations of disturbed compensation within the circulatory system. To replace lost body fluids the subcutaneous or intravenous administration of 0.9 per cent sodium chloride solution during a prolonged operation often sustains the blood pressure.

For combating failure of the circulation due to continued loss of blood or a massive hemorrhage, there is no method as effective as the transfusion of blood. Preoperative preparation for such a procedure through blood grouping and having a donor at hand, when contemplating a prolonged or particularly hazardous operation, facilitates sustaining the circulation before the compensatory mechanism has failed. In those unanticipated instances when the need for transfusion occurs and in lieu of an immediate donor, certain blood substitutes have proved to be adequate until a qualified donor is available. Among these various substitutes the intravenous administration of seven per cent gum arabic dissolved in 0.9 per cent sodium chloride solution has proved effective, and may be repeated with little danger. A 0.9 per cent sodium chloride solution may serve to tide over the circulation when at a low ebb. Hoitink has recently concluded, after most careful investigation of the various artificial blood substitutes, that in acute massive hemorrhage 0.9 per cent sodium chloride solution is preferable to other substitutes—even to blood transfusion.

Summary: Cardiovascular disease of serious import usually adds to the risk of a major op-

eration and may be an absolute contraindication for elective operations. Cardiovascular disease of lesser import need not deprive the patient of the benefits to be derived from the surgical treatment of associated lesions or conditions. Certain factors pertaining to changes that may and do occur within the cardiovascular system incident to or due to the operation, and which are or may be influenced by anesthesia, have been discussed. Since certain inhalation anesthetics during deep surgical anesthesia disturb the mechanism for maintaining vasomotor tone, the substitution of local and regional anesthesia, whenever possible with cardiovascular disease, provides minimum disturbance of the compensatory mechanism incident to the operation, and minimum loss of body fluids. Certain hazards of the operating room may be decreased by careful observations of blood pressure during operations, and the institution of methods of sustaining circulation before the compensatory mechanism within the cardiovascular system has failed.

INTESTINAL OBSTRUCTION

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(Presented before the Southwestern Medical and Surgical Association, El Paso, Texas, November 21-23, 1935.)

Pillore performed the first colostomy for intestinal obstruction in 1776; since then there have been three phases in the evolution of knowledge of intestinal obstruction. The anatomic-pathologic phase dates from about the beginning of the 18th century, continuing up to and beyond the life of Pillore. During this time many notable anatomic discoveries were recorded and some understanding of the pathology was acquired with recognition of the different types of disease in relation to anatomic structures. Even though Littre suggested in 1810 the advisability of opening the colon for obstruction, colostomy had been performed in only 33 recorded cases from 1776 to 1839; death occurred in almost every instance.

In a general way the 19th century embraces the second phase which was largely concerned with the development of surgical procedures for the relief of intestinal obstruction. It was

only during the latter part of the 19th century that much progress was made—attributable largely to the adoption of those principles which initiated modern surgery. Dupuyten is credited with the first enterostomy—in 1839; but it remained for Nelaton to definitely establish this in 1850, as an acceptable and justifiable procedure for the relief of acute intestinal obstruction.

During the latter part of the 19th and through the early years of the present century surgical procedures were perfected, and more or less definite indications for them were formulated. There was a mortality rate in general of approximately 50 per cent, not necessarily due to the magnitude of the various operations, but because of unknown factors.

Little success had been achieved through efforts to reduce this mortality rate until the last 10 to 15 years and this may be designated as the third phase in the evolution of knowledge pertaining to intestinal obstruction. This phase has had to do with the determination and recognition of the physiologic changes and causes of the toxemias incident to and due to intestinal obstruction, and has facilitated the inauguration of methods which have reduced materially the mortality rate, and which may be still further reduced.

While many factors are concerned in the ultimate prognosis, notably whether the obstruction is due to benign lesions or to malignancy, the immediate prognosis is dependent in the order of their relative importance upon, (1) the circulation of the intestine involved in the obstruction, (2) the height or level of the obstruction, (3) the duration of the obstruction, and (4) the magnitude of the surgical procedure for relief of the obstruction.

Strangulated external hernias constitute approximately 45 per cent of the cases of acute intestinal obstruction on emergency surgical services, and in these the prognosis is dependent largely upon the circulation and the viability of the involved intestine. Patients with acute intestinal obstruction are not suitable for intestinal resection, which under the circumstances is particularly hazardous. The incidence of intraperitoneal herniation and strangulation of the intestine in which the question of intestinal resection requires serious consideration is small. Intestinal obstructions due to volvulus rarely have sufficient disturbance to

the circulation of the involved intestine to necessitate resection. The same is true of practically all other intraperitoneal obstructions. Mesenteric vessel occlusion is not to be considered in the category of intestinal obstruction since it is primarily a vascular lesion and mechanical obstruction is not concerned. Generally speaking, it may be stated that with rare exceptions the circulation to an obstructed portion of intestine is seldom sufficiently impaired in intraperitoneal intestinal obstruction to be prominently concerned in the immediate prognosis. The frequency with which intestinal resection is unavoidable in that large group of cases of intestinal obstruction due to strangulation of an external hernia emphasizes the relation of the circulation to the immediate prognosis.

The height of the obstruction has an important bearing, particularly in regard to, the acuteness of the onset of the obstruction, the rapidity with which the physiologic changes and clinical evidences of toxemia are manifest and upon the urgency for the institution of methods, not only for relief of the obstruction but for maintaining physiologic equilibrium. Obstruction of the colon is often insidious in its onset, clinical manifestations are not usually acute, physiologic changes occur late, and obstruction may be tolerated for a relatively long time, except in those instances of volvulus or strangulation in which disturbance of the circulation causes acute clinical manifestations. The reverse is true when obstruction of the small intestine occurs. The onset of obstruction in the small intestine is usually acute, physiologic changes occur early and a progressively rapid course ensues. The higher the obstruction occurs in the small intestine, the more is this apt to be true. In other words, obstruction of the small intestine is less readily tolerated than obstruction of the large intestine. Inasmuch as the small intestine is involved in approximately 85 per cent of the cases of intestinal obstruction, the majority of instances are serious.

While other etiologic factors are concerned, not including strangulated external hernias, in which the colon is involved, the majority of the cases of obstruction of the large bowel are caused by neoplasms. In approximately 50 per cent of the cases of intraperitoneal intestinal obstruction the obstruction occurs with-

in a few days, weeks or months, or perhaps years after an abdominal operation, and is most frequently due to adhesions, bands or false and artificial fossae produced by or incident to the previous operation. These may involve the large intestine, but usually the small intestine.

Diagnosis of Obstruction: When circulatory changes occur from strangulation, the acuteness of the clinical manifestations leads to the early recognition of obstruction through the strangulated external hernia or through urgent abdominal exploration. In the absence of circulatory changes the symptoms may not be particularly acute and may be sufficiently masked by symptomatic treatment to lull one into a false sense of security. Early diagnosis, particularly in obstruction of the small intestine, materially favors a good prognosis.

Haden and Orr and others have definitely shown, and clinical experience has confirmed the observation, that the most devastating effects of intestinal obstruction are the physiologic changes, characterized by changes in the blood chemistry, most notably in the urea nitrogen content of the blood, and in the blood chlorides. The higher the level of the obstruction in the tract the more rapidly do these changes take place, and the more rapidly the patient declines.

The clinical manifestations formerly regarded as the result of toxemia but likely never due to toxemia, vary with the intensity of the changes as demonstrated by the alterations in the blood chemistry. The prognosis is largely influenced by the physiologic changes hence an early diagnosis and the institution of proper methods of management preliminary to operation before serious alterations in the blood chemistry occur are extremely vital. The generally recognized clinical manifestations of abdominal distention and vomiting of intestinal contents are not those of early intestinal obstruction, but are manifestations of imminent death. Intermittent general or local pain, nausea and vomiting are the early cardinal symptoms of intestinal obstruction and should never be disregarded when persistent. Exceptions do occur, but the burden of proof rests upon the exception and not upon the rule. The higher the obstruction the more persistent the nausea and vomiting and the suspicion of ob-

struction may be verified by early disturbances in the blood chemistry.

The roentgenologists have contributed the roentgenologic signs of intestinal obstruction. Such signs usually are not early in the course of obstruction, but only after considerable dilation of the intestine has occurred and may not be regarded properly as early signs of intestinal obstruction. Roentgenologic signs of intestinal obstruction when present confirm the clinical manifestations and often aid materially in localizing the obstruction. Seldom should the clinical manifestations of high intestinal obstruction be allowed to continue until roentgenologic signs can be depicted. Delay and observation may be justified in low intestinal obstruction, particularly of the colon, in the absence of circulatory changes, when doubt exists regarding the diagnosis, until the roentgenologic signs establish the diagnosis.

An early diagnosis of acute intestinal obstruction is particularly important when obstruction occurs soon after an abdominal operation; the early cardinal symptoms should not be mistaken for so-called postoperative gas pains. The findings on auscultation of the abdomen are often sufficiently definite to establish the diagnosis of obstruction, but at times are absent even in complete obstruction. The silent abdomen should not cause one to be misled when intermittent pain, nausea and vomiting are not readily relieved by the usual methods.

Physiologic Changes: Since physiologic changes characterized by alteration in the blood chemistry, notably the retention of urea and the loss of chlorides take place, and since experience has proved that such alterations influence the mortality rate and the immediate prognosis materially, particularly in high obstruction of the small intestine, it is essential that the degree of alteration of blood chemistry, is determined before instituting surgical procedure. Seldom is surgical procedure so urgent that time may not be allowed for preoperative determination of the alterations in the blood chemistry, except when the circulation of the obstructed restoration of fluids by intravenous administration, particularly of chlorides in the form of 0.9 per cent sodium chloride solution in large amounts, entirely justifies the delay in instituting surgical procedures.

The higher the level at which the obstruction occurs the more vital are such preoperative procedures; the lower the level at which the obstruction occurs the more deliberately may one attempt to restore the physiologic equilibrium before instituting surgical procedures. Great improvement in the condition is brought about by preoperative drainage of the upper gastro-intestinal tract by intermittent or continuous gastric lavage with the suction apparatus, simultaneously with the restoration of fluids and chlorides. The surgical procedure for the relief of the obstruction is not the emergency; the combating of the physiologic changes incident to the obstruction is of first importance, except in those cases in which the circulation to the obstructed portion of intestine is involved. The longer the duration of the obstruction the more essential are these preoperative methods.

Surgical principles: Experience has led to the adoption of definite principles regarding the surgical management of intestinal obstruction. Primary intestinal resection should seldom, if ever, be done for relief of obstruction, except in those cases in which disturbed vascularity to the obstructed intestine jeopardizes its viability. There are exceptions to the rule, but in general the simplest surgical procedure which relieves the obstruction insures the best immediate prognosis, even though secondary operations may be required to eradicate the cause of the obstruction. To reopen the primary incision for an early postoperative obstruction and thoroughly explore an abdomen usually does not give the greatest prospects of recovery, nor does evisceration of the patient with mechanical drainage of the entire distended intestinal tract contribute to a low mortality rate. In many instances of postoperative intestinal obstruction, the simple division of an adhesion or band entirely relieves the obstruction. Such simple factors are encountered more often when an obstruction develops months or years after an abdominal operation than during postoperative convalescence.

There are few exceptions to draining the colon proximal to an obstructing neoplasm as a primary operation, reserving resection of the neoplasm until after the patient has recovered from the effects of the obstruction. The occasional exception is an obstructing neoplasm in a redundant sigmoid which may readily be ele-

vated out of the abdomen by a Mikulicz operation, provided a simultaneous temporary colostomy or cecostomy is done for relief of the obstruction.

Few simple surgical procedures possess the effectiveness of enterostomy for obstruction of the small intestine, particularly during immediate convalescence after an abdominal operation. Enterostomy has been greatly discredited during recent years largely because of its being done without indications and at improper sites. Although the effectiveness of enterostomy has been demonstrated repeatedly when performed through a small incision in the first distended loop of intestine presenting upon opening the peritoneum, failure has been due to faulty selection of the segment of intestine. The principle of drainage by enterostomy of the first presenting loop of distended intestine is readily exercised when distension is not great, but is immediately defeated in marked distension, particularly in obstruction of sufficient duration that paralytic ileus is associated. When one realizes that huge distension of the small intestine produces multiple obstructions through acute angulation of coils upon coils, it is readily understood that the enterostomy simply serves to drain the loop of intestine in which the tube is inserted, and that angulations of the intestine both distal and proximal to the enterostomy prevent their drainage. Enterostomy for effective drainage, must be placed in the highest distended loop of small intestine or in the lowest distended loop immediately above the obstruction in order that collapse of distended bowel may progress upward or downward as aided by peristalsis. In accordance with these principles cecostomy in cases of paralytic ileus has been effective where enterostomy in the first loop of small intestine presenting has failed.

Summary: Realization during recent years that physiologic changes in the blood chemistry occur in acute intestinal obstruction and that the changes materially influence prognosis, has led to the adoption of methods of management which have resulted in an appreciable reduction of mortality rate. The determination of the degree of alteration in the blood chemistry and the preoperative restoration of physiologic equilibrium are essential to the most favorable prognosis. Except in those cases in

which the disturbed vascularity of the obstructed portion of the intestine necessitates operations of considerable magnitude, the mechanical obstruction should be relieved by the simplest surgical procedure possible, reserving the removal of the obstructing lesion for a subsequent operation, particularly when the obstruction is due to a neoplasm. The effectiveness of cecostomy and enterostomy as relatively simple procedures justifies their frequent employment for the relief of acute intestinal obstruction.

ADVERSE RESULTS FROM BROMIDE THERAPY

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That bromides may produce psychoses has been known for years. Only recently have they been recognized as causing psychoses. They are often taken without advice of physicians. Bromides are prescribed by physicians not realizing that they cause psychoses. Patients who have more than one physician may be getting a bromide prescription from each.

Bromides are used only for pre-existing conditions; therefore mental changes from bromides are superimposed upon psychoneuroses or psychoses.

Certain states are pre-disposed to bromide intoxication: Alcoholism, beginning general paresis, various toxic states, cerebral arteriosclerosis, general debility, etc.

Bromide intoxications are prone to develop upon depressed states. Poor elimination is, no doubt, a contributing factor. Small doses of bromide even for short periods in inactive lethargic individuals may produce more definite mental symptoms than large amounts for even prolonged periods in active individuals.

A person with a definite psychosis, often has a change of type following ingestion of bromides sometimes leading to error in diagnosis. Depressed states may present a manic phase or vice versa. A retarded, resistive, negative praecox may become actively combative and disturbed. As in all psychoses, the personality element is manifested in delirium or hallucinosis. Therefore, the underlying condition must not be overlooked and, if bromide intoxica-

tion is recognized, the prognosis is to be reserved until the effects of the bromide have entirely disappeared.

State hospital authorities have recognized a great increase in bromide mental disturbance, probably due to the present economic depression. Only recently have laboratory methods been devised by which the bromide in the blood may be correctly estimated. Such examinations are now routine in many state hospitals and it is surprising the number of admissions showing high blood concentration of bromides.

The blood bromide may vary from two mg. to 300 per 100 c.c. of blood. A few mg. in a susceptible individual may produce symptoms and again, a higher concentration may produce none. Rapidity of elimination of the drug is important. High concentrations may be found even after discontinuance of it. It is then obvious that ingestion of large amounts extended over a long period; 200 mg. soon after its discontinuance means far less than 25 mg. a month to six weeks later.

Cases have been reported in which mental symptoms appeared only after withdrawal, and a few observers suggest that withdrawal should be gradual. The general opinion however is that it is safe to discontinue the drug suddenly.

Bromide poisoning may be classified as (1) intoxication, meaning simple mental and physical sluggishness; and (2) psychoses with delirium or hallucinosis—delirium being the more common.

In the milder types it is not always possible to make diagnoses. The general symptoms are: Mild gastro-intestinal disorders, vasomotor disturbances with more or less cyanosis, tremor, with considerable decomposition of movements, dizziness, disturbance of station and gait, on which may be grafted delirium or hallucinosis. The patient invariably shows disorientation; he is usually restless and uneasy. He may be incontinent and perhaps unable to swallow or take food, presenting a more or less typical picture of terminal general paresis.

An example of simple intoxication: A man, past middle life, had been ill for some time; he was mostly confined to the house, and in a lethargic state. He had not been sleeping well and bromides had been given. Almost im-

mediately he became more inactive, showed marked mental sluggishness and answered questions in an almost inaudible tone. He was but slowly cooperative. There were no outstanding neurological symptoms except that, on the day of consultation, a rather marked tremor had developed. It seemed more marked on the right. There was definite decomposition of movement in both arms. It was these symptoms together with the negative neurological findings which suggested the possibility of bromide intoxication. I suggested that the bromides be withdrawn and, so far as the tremor and mental symptoms were concerned, there was immediate improvement. This individual was likely highly susceptible to bromides and, had they been continued, probably would have had eventually a profound bromide psychosis.

An example of profound intoxication: About a year ago I attended a married woman, 34, who had never been robust, had always been nervous, and had had one or two "nervous breakdowns."

For some time she had been taking large doses of bromide. She suffered from mild gastro-intestinal disorder; her mouth was sore and tongue fiery red; there was a bromide rash, and cyanosis; heart action was weak and irregular; she was restless, uneasy, and emotional; she was sleeping poorly, and was moderately disorientated.

She became rapidly worse, completely disorientated and incontinent; she had difficulty in swallowing, was quite wildly delirious, at times combative and was entirely non-cooperative. The tremor was marked, showing definite decomposition of movement with marked ataxia and incoordination.

All bromides were immediately withdrawn. She slowly improved; after six weeks she was taken home. In another two weeks she was entirely well.

Treatment: Custodial or nursing care is always necessary in the more profound states. The bromide must be withdrawn immediately. Thorough elimination should be established, proper nourishment—fluids and sodium chloride—three to four drams per day—should be given. Fifteen grains of sodium chloride neutralizes 90 grains of bromides.

PRIMARY CARCINOMA OF THE GALL BLADDER

(Case Report)

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Malignancy of the gall bladder is probably greater than supposed. From 1907 to 1930 the Mayo Clinic had 22,365 operations on the gall bladder and biliary tract. In 312 of these primary carcinoma of the gall bladder was found—an incidence of almost one per cent. It constitutes around five to six per cent of all carcinoma of the human body. Sarcomata and benign tumors of the gall bladder are exceptionally rare. Primary carcinoma is about three times more common than metastatic carcinoma. Involvement of the gall bladder is about three times more common than involvement of the bile ducts, including ampulla of Vater.

Carcinoma of the gall bladder is about four times more common in the female than in the male, while the ducts are more often involved in the male. Secondary carcinoma of the gall bladder is relatively more common in the male than in the female. In the series of 312 cases just referred to, all but approximately five per cent appeared after 40—the average being 57 years.

The frequent association of carcinoma with gall stones suggests these as a causative factor, and hence argues for early removal of stones as a prophylactic measure. Graham points out that in uncomplicated cases of stones before damage to heart, liver and kidneys, his operative mortality is only one per cent, and only 1.5 per cent in all types of cases. He states this is less than one-fourth the risk the patient is running of developing cancer. Graham goes so far as to say:

"From the standpoint of cancer prevention, it would seem to be our duty to inform the patients with gall stones that, in general, they have a greater chance of dying from cancer of the gall bladder than they would have from properly performed operations."

He also says the danger of carcinoma in women past 40 with gall stones and a family history of cancer is very great. Calculi are seldom found in secondary carcinoma of the gall bladder.

Pathologically there are three types: (1) Villous papillomatous or fungating carcinoma, (2) gelatinous carcinoma, and (3) diffuse, flat, infiltrating type. Usually the process is so far along that it is impossible to tell in which portion of the gall bladder it started. Metastasis usually takes place in the regional lymph nodes, liver or pancreas.

The symptoms are variable. Frequently there is a history of previous attacks, suggestive of gallstone colic. The more common symptoms are pain, dyspepsia, jaundice, constipation, anorexia and emaciation. The jaundice is probably due to metastasis to the liver or, if involving the ducts, to mechanical obstruction. The jaundice is progressive in contrast to that associated with stones. Gastro-intestinal symptoms such as belching, vomiting, loss of weight and loss of appetite are early symptoms. Pain is variable. It may resemble a true colic or just a dull ache in the right upper quadrant. It may be referred to the interscapular region or it may be a boring sensation in the upper lumbar spine. Ascites is not uncommon. In the terminal stage jaundice deepens and the patient refuses all nourishment. Cachexia and loss of strength become pronounced. Cholemia, delirium and coma lead to the death of the patient. Fever may or may not be present, depending on whether or not cholangitis is associated.

There may or may not be a palpable mass. If present, it usually moves with respirations while carcinoma at the head of the pancreas will not. The presence of urobilinogen in the urine is often an early diagnostic aid. The duration of symptoms are relatively short as compared with carcinoma of the stomach. In unoperated cases from the onset of jaundice, the average duration until death is six months. Not infrequently the primary lesion remains small and death is due to large metastases. X-ray is a valuable diagnostic aid in its negative findings.

In the differential diagnosis cholelithiasis, cancer of the stomach, cancer of the liver, gumma of the liver, echinococcus cysts of the liver, cancer of the bile ducts and of the head of the pancreas are to be considered. Weiss says;

"Enlargement of the gall bladder, the presence of a steadily increasing tumor in this region, and a history suggestive of cronic cholelithiasis, accompanied by loss of appetite, anemia and cachexia

in a person about 50 years of age, are sufficient evidence for alternative diagnosis of carcinoma of the gall bladder." Judd and Gray say, "There is no distinct clinical picture of carcinoma of the gall bladder or of the biliary ducts, for the symptoms presented are dependent, to a great extent, on the site of the lesion and the changes associated with it."

Treatment is surgical. In most cases the process is so far advanced that it is unwise to attempt removal. Pallin states that the danger from cholemia is seldom great until the jaundice exists for from three and a half to four weeks, and concluded, therefore, that operation should be performed in not more than three weeks after severe, persisting jaundice has been suspected of arising from a malignant disease.

Preoperative observation and preparation of the patient is essential for the immediate outcome. If after repeated duodenal drainages, no bile is obtained and the serum bilirubin remains the same or shows an increase, this is evidence of complete obstruction and necessitates immediate intervention to reestablish the flow of bile. The immediate postoperative mortality in such cases will be high. On the other hand, if there is bile in the duodenal drainage and if the serum bilirubin decreases, the patient should be given solutions of glucose, sodium chloride and calcium chloride intravenously to produce a better operative risk. The type of surgical treatment will depend upon the site and extent of the lesion. To reestablish free flow of bile is primary and removal of the lesion secondary. In the 312 cases reported by Judd and Gray biopsy alone was done in 172, removal of gall-bladder in 59, drainage of gall-bladder in 42, removal of gall-bladder and drainage of the common bile duct at the same time in nine, some type of anastomosis in 27 and in three the ampullae of Vater were resected.

Weber in 1927 made a study of the grade of malignancy and the length of life after operation. In 30 cases, four died in the hospital, leaving 26 for analysis. In 12 of these, in which the gross lesion was grade two or less, the patients lived an average of two years and two months. In the other 14, grade three or more, the average was 4.8 months. As to the advisability of exploration in these cases, we had a man recently, age 64 years, who gave a history of repeated gall-stone colic over a period of several years. He had the usual gas-

tro-intestinal symptoms, such as, belching, bloating after eating, anorexia, and had lost about 60 pounds in weight. In addition there was pain in the right upper quadrant, radiating to the back. It was dull in character and not requiring morphine now as it had formerly. Jaundice had been present for about two months. Gastro-intestinal x-rays showed no filling defects of the stomach but a displacement upward and outward of the duodenum suggestive of a tumor in the head of the pancreas. The liver had been enlarged but not nodular and had showed no increase in size for the past six months. We believed we were dealing with malignancy but after considerable preoperative preparation explored the right upper quadrant. The gall-bladder was buried in dense adhesions. It contained white bile but no stones. The gall-bladder was removed and the fistulous tract in the duodenum sutured. The common duct was found enlarged and upon opening it a large amount of soft granular debris was found. Down behind the duodenum was felt a large stone, which was removed with some difficulty. The common duct was drained for three weeks. After two weeks of a stormy convalescence, the man has now, six months later, regained most of the weight that he had lost. No tumor was found in the head of the pancreas or in the biliary system.

Case Report; Male, 82, came to us in July, 1935. His chief complaint was feeling cold and weak. He had excessive gas on his stomach and slight shortness of breath, but no pain. His past history had no suggestion of gall-stone colic. He had not been well for two months; a thorough x-ray examination in San Antonio did not reveal trouble with his stomach. Recently he had all his teeth extracted to see if this was the cause of his condition.

Examination: A small man, moderately jaundiced and slightly emaciated; liver and gall-bladder not palpable; no masses in abdomen; slight soreness in right upper quadrant; prostate normal; nothing in chest; on admission, the temperature was 97, pulse 82 and respiration 22 per minute. Urine had 20 pus cells to the high power field. Stools were normal in color. Gastro-intestinal x-rays were negative for filling defects of the stomach and duodenum.

During the 108 days in the hospital, he grad-

ually became weaker with marked distaste for food. He was constipated, requiring large doses of calomel, epsom salts and sal hepatica. Jaundice and emaciation were progressive. He developed intermittent pain in the lower back first and later in the right upper quadrant, but at no time was a mass palpable. At no time did he have clay colored stools, but a week or two before death there was bile in the urine. Also, a few days before death he developed a stubborn cough with pain in the right chest just above the liver anteriorly. During the 108 days his temperature was subnormal—even at death. Delirium and coma preceded the end. Death was probably due to cholemia.

Permission for post-mortem examination of the abdomen only was granted. The report: A small man of advanced years, marked emaciation and deep jaundice dark green color. The gall-bladder was solid greyish, twice normal size. When this mass was dissected from underneath the liver it was found invading the latter. The common bile duct was normal in size but many enlarged nodes were found along its course. There was no fixation of the duodenum to the tumor.

Tissue examination by Dr. W. W. Waite: Small pieces of liver, greyish white infiltration; accessory tissues are greyish, the source of which cannot be determined; there is definite new growth made up of epithelial cells with glandular arrangement; there is extensive supporting areas of fibrous tissue. Diagnosis: Adenocarcinoma.

We do not believe that the incidence of primary carcinoma of the gall-bladder in private practice is 0.9 per cent as it is in the large clinics. The more chronic and grave cases go to the larger clinics. The larger clinics find a higher incidence of cancer than is found in general practice because a routine microscopical study is made. However, the literature is conclusive that cancer of the gall-bladder is not rare and the association of the condition with gall stones in 90 to 95 per cent of the cases, would lend cadence to the urge on the part of the average physician to advise early operations for gallstones, if possible, before the patient reaches the cancer age. In this way we may cut down the mortality from this condition. The advisability for early explora-

tion in suspected cases of malignancy in the right upper quadrant is self evident.

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TRAUMATIC ANEURYSM OF THE ARCH OF THE AORTA WITH RUPTURE INTO ESOPHAGUS

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White schoolboy, 19, was admitted to the hospital on March 27, 1935, with, hematemesis, slight non-productive cough, severe pains in the upper right chest and, extreme weakness.

About one week prior to admission he developed a slight cold. At the same time he had slight pains in the right chest. He was put to bed and treated with home remedies until one day prior to admission when he made a trip to town. He walked from the house to the automobile and entered it; a sharp pain came in the right chest and he vomited about a quart of dark brown-red fluid with no clots. He felt better, leaned back in the seat, but had a chill and copious sweating. His father carried him into the house. He was in a prone position for about two hours. He then attempted to walk to the car. He vomited nearly a quart of the same type of fluid as before, not bright red, nor did it contain clots, nor was it frothy.

Past History: In 1932, the patient was shot in the left chest. The bullet entered at about the third interspace, just to the left of the sternum. He had no cough, no hemoptysis and no difficulty or pain on breathing, and no nausea or vomiting. The pulse at that time was 106 and the respirations 28. The next day

the pulse rose to 134 and the respirations to 32, where they remained for a little more than 24 hours; the pulse slowed to between 90 and 100 and stayed there until the patient was discharged from the hospital. An x-ray of the chest revealed a slight effusion about the first interspace alongside the mediastinum which was widened and dense probably with fluid.

The patient enjoyed good health for the next 20 months. In March, 1934, he experienced difficulty in swallowing solid foods. He was admitted to the out-patient department for dilation of a supposed esophageal stricture. Esophagoscopy with dilation of the esophagus was performed. The patient seemed much improved, and was able to swallow easily when discharged.

He enjoyed good health then until one week prior to his recent admission. Examination revealed general condition to be fair with a slightly apprehensive facies. Temperature was 99.4, pulse 130, respirations 28, blood pressure 80/55 and, nutrition poor. Buccal mucosa and conjunctiva were markedly pale. There was an ancient healed scar just to the left of the sternum about the third interspace.

Abdomen was scaphoid with extreme tenderness in the upper left quadrant. The skin was extremely pale. Blood examination revealed 14,500 leukocytes, with 82 polymorphonuclears, six monocytes and 12 lymphocytes. The blood Kahn was negative.

X-ray of the chest showed, upper mediastinum clear, aortic shadow widened to the right, heart shadow small and slight increase in lung markings. Opinion: Possible aneurysm in the aorta.

Morphine sulphate was given; an ice cap was placed on the abdomen; small pieces of ice were given by mouth; hypodermoclysis of normal saline solution was started. During the first day the patient vomited twice—each time about 10 to 16 ounces. Vomitus was dark red-brown in color, contained no clots, was not frothy and responded positively to tests for blood.

The day after admission he was transfused with 450 c.c. of citrated blood. He fell asleep shortly after the transfusion and remained quiet through that night. The following day he was given 750 c.c. of normal saline, 50 c.c. of 50 per cent glucose and 30 c.c. of five per cent calcium chloride intravenously at nine o'clock

in the morning, and morphine sulphate, gr. $\frac{1}{4}$. About 10 A.M. he felt faint. He vomited 1500 c.c. of bright red blood with a few clots. The pulse went to 160 per minute and became thready. Breathing was labored and shallow—52 per minute. He broke out in a general sweat; the skin became gray. He lapsed into partial coma. About one hour later he roused and vomited about 400 c.c. of bright red blood containing a few clots. He was quiet then for about 15 minutes, when he again vomited about 400 c.c. of bright red blood. At this time he lapsed into coma from which he never aroused.

Post-mortem examination: The stomach is filled with partially clotted blood. The thymus is still present, considerably enlarged. In the arch of the aorta is a small tumor which on removal is found to come from the aorta just above the arch where there is an opening about six mm. in diameter. The aneurysm is about 50 mm. in diameter. There is an erosion into the esophagus. On section the aneurysm is filled with organized blood clot. There is a question whether this has a real wall, or whether there is a perforation of the aorta with hemorrhage into the mediastinum.

Diagnosis: Aneurysm of the aorta with perforation into the esophagus, and hemorrhage.

RUPTURE OF THE HEART

GEORGE O. BASSETT, M. D.

and

ZEBUD M. FLINN, M. D.

Prescott, Ariz.

A male negro porter, 43, married, complained of asthmatic attacks, shortness of breath, orthopnea, dull pain over heart, weakness, palpitation, loss of weight and strength, beginning probably two years before.

He had been well and strong and indulged in prolonged strenuous exercise without ill effects until the past two years. Several years before he had had a penis sore which had healed quickly on the application of an ointment. He had had gonorrhea. He had been married twice, with two living children by his present wife. His wife had had several miscarriages. Lately he had been unable to sleep unless propped up in bed; he was getting weaker,

was tired after the day's work, and had lost about 10 pounds.

Examination: Dyspnea was slight; throat was inflamed; a number of teeth were missing; there was passive congestion of the chest; rales were scattered throughout all lobes; a moderate hyper-resonance suggested emphysema; the liver was about one finger's breadth below the costal margin; a faint scar of an old ulcer was on the prepuce; there was a generalized enlargement of the superficial lymph nodes—firm, concrete and not painful; the knee jerks were sluggish; the apex impulse of the heart was forceful; a suggestion of a cardiac thrill was noted over the apex; the apex impulse was strongest just beyond the nipple line in the 5th interspace; the right border of the heart was definitely beyond the sternal border; the area of dullness over the base seemed broader than normal; a confusion of murmurs were heard over the apex area, both systolic and pre-systolic in time; the first impression was of a double aortic lesion with probable aneurysm; hemic murmurs confused the picture; over the aortic area and along the border of the sternum systolic and diastolic murmurs were evident; the pulse suggested the Corrigan type.

The Wassermann and Kahn were four plus. X-ray of the chest showed a definite prominence of the aortic arch to the right, with some transverse enlargement of the heart. He was fluoroscoped and a well marked aneurysmal bulge of the first part of the arch of the aorta was noted.

A diagnosis of syphilitic aortitis with probable aneurysm was made. His condition was explained to him. Treatment was begun with fractional doses of neoarsphenamine, potassium iodide and mercury rubs.

He improved, was able to sleep without extra pillows and his dyspnea decreased markedly. He felt much stronger, his appetite improved and the pain ceased.

On the night of October 30, at two A. M., his physician found his face, lips and chest suffused with blood, the eyes protruding, his mouth agape, and his hand clinched. The attack began about an hour before, with sudden pain in the chest over the heart, dyspnea and early unconsciousness.

The autopsy findings follow: There was slight passive congestion of both lungs. The

pericardium contained about 300 c.c. of free blood. The heart measured five by five inches and weighed 16 ounces. The right atrium was thinned and slightly enlarged. Vena caval openings were negative. On the posterior surface of the atrium at its junction with the right ventricular wall was a perforation one cm. in diameter. An area 1.6 cm. in diameter surrounding the perforation was thinned, discolored and friable, suggesting gumma formation. The right auricular appendage was enlarged.

The mitral valve showed marked thickening, roughening and was contracted. The aortic valves were thickened, roughened and retracted. Throughout the aorta there was frank evidence of mesoartitis, which seemed to be super-imposed on hyalinization and calcification. On the lateral wall of the ascending aorta 1.5 cm. from the apex of the arch there was a bulging aneurysm, measuring when fixed in formalin, 2.5 by four cm. The intima was thinned as was the adventitia. Only vestigial remains of the media were found in this area.

Discussion: Although rupture of the heart is not rare, only a few cases of rupture of the heart as in this one have been reported—the great majority occurring on the anterior surface of the left ventricle.

Of the two major causes, coronary disease followed by infarction, and syphilitic gumma formation, the latter is probably the more common.

This case is classical in that it shows all forms of pathology common in syphilitic disease of the heart, valvular disease, aortitis, aneurysm and rupture of the wall.

TREATMENT OF ACUTE EMPYEMA

GEORGE THORNGATE, M. D.
Phoenix, Arizona

(Presented before the staff of the Good Samaritan Hospital.)

The purpose of this paper is to redirect our attention to certain principles of treatment as brought forth by Graham and the empyema commission, and other eminent surgeons.

Heuer's dictum is that empyema is not a disease entity but is either a single complication of an antecedent respiratory infection or one

of several serious pathological conditions associated with respiratory infection. Its frequency, seriousness and mortality are variable and largely dependent on the type and virulence of the infection. Over a period of years the mortality curve of empyema is parallel to the mortality curve of pneumonia in the same locality.

Empyema occurs in two forms: Intrapleural abscess in typical pneumococcus lobar pneumonia; and intrapleural infection with unilateral or bilateral pneumonia, pulmonary abscess, mediastinitis, pericarditis, etc., due usually to virulent streptococci. Some think pleuritis antedates the involvement of the lung. The simple empyema, has a thick purulent exudate usually containing pneumococci with firm and well defined walls. The symptoms are comparatively mild. The second is an intense inflammation of the pleural surfaces and the exudate is thin and watery, containing streptococci. The symptoms are violent, and out of proportion to those of simple empyema. Proper treatment depends upon definite knowledge of the disease and its underlying pathology and bacteriology.

The principle of treatment put forth by Graham demands avoidance of open pneumothorax in the acute stage until the pus becomes thick; this refers chiefly to streptococcus empyema. The inflammation is general, there is little fibrin in its exudate and therefore little walling off and the mediastinum is not rigid. The pleuritis and pneumonia are synchronous, and a collapse of the lung with distortion of the other lung at a time when the vital capacity is already greatly reduced throws an intolerable load upon the already embarrassed respiratory and circulatory systems. In simple empyema the pneumonia usually has already receded, and the abscess has been walling off almost from its inception. All of this means that rib resection and open drainage are contra-indicated in the formative stage of empyema.

The prevention of chronic empyema by rapid sterilization and obliteration of the infected cavity implies adequate drainage. Irrigations may aid but are not important. Pulmonary gymnastics are irrational because the lung is not pushed out from within, but pulled out from within by contraction or granulation

tissue at the junctions of the visceral and parietal pleurae. Graham thinks drainage is best carried out by rib resection at the lowest point.

Careful attention to the nutrition of the patient is important. Persons with empyema often have negative nitrogen balance, i.e., their nitrogen intake is less than the output. This must be rectified. A high caloric mixed diet with liberal fluid is sufficient.

The surgical methods now in use are: Repeated aspiration; closed drainage; early or late resection. There are earnest advocates of all. In simple empyema, before the war a large series of rib resections at Baltimore showed a total mortality of six per cent and no mortality in 60 children. In St. Louis a series of repeated aspirations and rib resections showed no mortality. In a Cincinnati series repeated aspiration only gave a mortality of zero. In simple empyema it makes no difference what method is used. In associated empyema all methods gave high rates when the virulence of the organisms was high. Early rib resection is contraindicated in this type whether virulent or not.

Irrigations, as intimated above, are of little moment, being a detail only of the treatment. Both Graham and Heuer favor 0.5 per cent Dakin solution.

A departure from the usual procedure is Danna's method of aspirating the pus and replacing it with air. This, he claims, gives the diseased lung the advantage of pneumothorax treatment without a sudden collapse.

A further departure is Connor's method. He postpones operation until a late date, meanwhile aspirating the pus and building up the patient by forced fluid and nutrition and blood transfusions. He then opens the pleural space and packs the empyema cavity tightly with plain gauze. In two or three days he removes it and does not repack. Patients are gotten out of bed in a few days and the building up measures are continued. He claims remarkable results.

Summary: The principles of treatment of acute empyema are: Early recognition of the disease process; avoidance of pneumothorax in acute stage; rapid sterilization and obliteration of empyema cavity; attention to the nutrition of the patient; and adequate drainage.

DOUBLE EMPYEMA IN CHILD; DRAINAGE; RECOVERY

CHARLES N. PLOUSSARD, M. D.

Phoenix, Arizona

(Presented before the staff of the Good Samaritan Hospital.)

A child of six had pneumonia on right side with mouth temperature of 106.8, panting respiration 50 or more, pulse to 160, basal lung pain and friction sound; marked improvement resulted in about six days. Then a similar process on the left and similar symptoms developed. He continued desperately ill with fever of over 103 degrees. Pleural friction sound first disappeared from the right and then from the left. The respiration rate went to 80 per minute. Dullness developed in both chests.

A diagnosis of double empyema was made and proven by withdrawal of pus by needle from each chest. A peculiar finding by x-ray was that pus occupied a space between the lung and chest wall from the diaphragm to the lung apex.

On the 21st day of illness a segment of the right eighth rib was resected and a large cystotomy tube was inserted in the pleural cavity. Irrigation with 1-10000 mercuric iodine solution was done daily. After nine days of drainage the irrigation fluid returned clear and the tube was removed. Adhesive was placed firmly over the opening. The child's condition for a time after institution of drainage improved but soon became grave again with pulse up to 170, respiration to 70 and fever to 103°. It seemed necessary to drain the pus from the left chest though any surgical procedure was dangerous; and it was not positive that the right chest was recovered.

A rib resection and insertion of tube in the left chest under local anesthesia produced profound shock lasting about two hours. This empyema was treated as the right had been and recovery soon was apparent and in the course of a few weeks complete.

The blood findings after a week of illness were: Hemoglobin 87 per cent, leukocytes 25600, polymorphonuclear 82, transitionals six, lymphocytes 12, filaments 79, and non-filaments 21.

The urine contained albumin, acetone, diacetic acid, and hyalin casts. Cultures from the urine grew pneumococci.

The interesting features of this case are: Double simultaneous empyema; distribution of the pus from diaphragm to apex between the lateral wall of the chest and the lungs; drainage of one side and cure in nine days. The essential treatment consisted of irrigations with 1-10,000 mercuric iodine solutions; though the child's condition was desperate the other side was drained and treated similarly to the first with good recovery.

INFERIOR MIDWIFERY: A Case Report

MELDRUM K. WYLDER, M. D.

Albuquerque, N. M.

A white female, 22 unmarried, had been in labor three days attended by a midwife, when I was called to see her almost in collapse. The abdomen was greatly distended; pulse was frequent and irregular.

The baby's head was wedged into the pelvis—probably preventing hemorrhage—where the midwife said it had been for more than 24



hours. The heart sounds of the baby could not be found, and the mother thought the baby had not moved for two days.

As the baby might have been alive I delivered it with forceps instead of doing a craniotomy. It took some time to deliver the pla-

centa as the uterus was much relaxed. I gave ergot with slight results. The abdomen was greatly distended with gas. Pitressin eliminated considerable gas but it quickly reaccumulated. She was hospitalized and given excellent care, but soon died.

The marks on the abdomen, shown in the photograph, are contusions caused by the midwife's hands, showing the force with which she attempted to express the baby. The discoloration of the right leg resulted from thrombosis of the iliac vessel.

Autopsy: The uterus was ruptured low posteriorly; the vaginal wall was torn; the abdomen contained a little free blood. There was thrombosis of the iliac vessels and beginning peritonitis.

Anatomical Diagnosis: Peritonitis from ruptured uterus and vagina and thrombosed iliac vessels.

The cause of death was mistreatment by a midwife.

ACUTE UNILATERAL EXOPHTHALMUS

(Case Report)

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Phoenix, Ariz.

(Presented before the staff of the Good Samaritan Hospital, Phoenix, Ariz.)

An acute unilateral exophthalmus was probably caused by rupture of an infected homolateral antrum. Movement of eye was greatly limited and the upper lid was edematous.

A white female, 16, had a cold followed two days later with an edematous acutely inflamed left eye "popped" out of its socket. Temperature was 103°; left side of nose was acutely inflamed with mucopurulent discharge from under the middle turbinate. The septum was markedly deflected crowding middle left turbinate.

Treatment consisted of, keeping the nasal mucous membrane shrunken, ice bag to the left eye and rest.

The exophthalmus, inflammation and edema of the eyeball soon decreased and all motion except motion of the eyeball returned; on the fifth day a small tense tender swelling appeared above the eye; bloody fluid was withdrawn

from the tumor. Fever was constantly about 100°.

X-ray examination at this time revealed an infected left antrum. Irrigation removed about an ounce of thick foul pus.

At the end of about two weeks the eyeball had receded nearly to normal, the inflammation was gone, her temperature was normal, headaches were infrequent, all eyeball movements were normal and the left antrum irrigation was clear. Edema of the upper lid persisted. Slight edema of the upper lid and probably slight exophthalmus still existed after another two weeks.

Comment: Acute unilateral exophthalmus occurs occasionally in children—usually from rupture into the orbit of infected ethmoid cells. For infected antrum rupture into orbits is exceptionally rare; for even infected cells to rupture into young adult orbits is even more rare.

RELIEF OF PAIN IN OBSTETRICS

BENJAMIN HERZBERG, M. D.

Phoenix, Ariz.

(Presented before the staff of the Good Samaritan Hospital.)

I shall discuss the drugs used, especially those generally used in this hospital, to relieve labor pains. I shall use statistics of larger hospitals.

Relief of childbirth pain is one of the newer phases of medicine. It is said that Queen Victoria was one of the first women to have the benefits of chloroform with childbirth. Religious prejudice still prevails, however, against obstetrical analgesia. Despite opposition, advances have been made, although the perfect agent or combination of agents is yet to be discovered.

Morphine relieves pain but does not produce amnesia, which of course is most desired in labor. If a patient has been long in labor without much dilation and rest is desired, morphine is the drug of choice—usually 1/6 to 1/4 grain. One must be certain that delivery is more than one hour, preferably three to four hours, distant; otherwise resuscitation of the baby may be difficult. The babies are apt

to be morphinized or at least narcotized. They may gasp once, then seem to fall asleep. At first they are rigid and blue, then relaxed with deadly pallor. There is no respiratory response to mild stimulation. The heart at first is strong, then slow and weak.

Morphine with scopolamine is used a great deal, usually in two of more doses. When labor is definitely established usually with two to four cm. dilation and the patient is beginning to complain, an initial dose of 1/6 grain of morphine and 1/150 grain of scopolamine is given hypodermically. If there is no lessening of the contractions in half an hour a second dose, 1/8 grain morphine and 1/200 grain scopolamine is given. Further drugs must be given entirely on the judgment of the obstetrician. This combination, like morphine alone, should be given at least three hours before delivery to prevent narcotism of the baby; if given too early it retards labor. It also makes some patients wild and hard to manage, and for that reason, the patients should never be left alone.

Pantopon or pantopon with scopolamine is especially applicable in patients with morphine idiosyncrasy. In the few in whom I have used it, there seemed less trouble with resuscitation; but the literature does not bear me out in this, and since I have had better results with other agents, I have discontinued the use of pantopon.

Dilaudid and scopolamine: Dilaudid acts like morphine with the advantages that analgesia comes sooner than that from either morphine or pantopon, and according to Ruch, there is little nausea from it.

Sodium amytal may be administered orally or intravenously; however oral administration is the safer and should be so used except in cases where immediate amnesia and analgesia are essential. In small doses, it is almost wasted as it merely makes the patient sleepy and she is fully aware of every pain and contraction. With adequate dosage results are fairly satisfactory. The blood pressure is the criterion for this drug. It should not be given with low blood pressure. For best results an initial dose of nine grains is given when labor is definitely established. Additional amounts may be given as required; 18 grains should be enough for 18 hours of labor. I use it intravenously

only in multiparas or in primiparas that are late in entering the hospital; one gets the full effect immediately; orally the full effect comes after about an hour. If respiration and pulse become too depressed, intravenous caffeine sodium benzoate revives the patient almost immediately and generally awakens her. At Kings County Hospital from sodium amytal 33 1/3 per cent had good analgesia, 25 per cent fair, and the remainder poor; the patients with poor analgesia had less than nine grains. Five per cent of the babies required resuscitation, but they were easily revived. The disadvantage of sodium amytal is that about a third of the patients are extremely restless and require almost constant attention, even restraint, especially when large amounts are used.

Nembutal, generally speaking, has the same characteristics as sodium amytal except that an initial dose of six grains is generally adequate.

Sodium amytal or nembutal with scopolamine is given the same as is either drug alone, except that 1/200 to 1/150 grain of scopolamine is given with the initial dose, and some times an additional 1/200 grain two to four hours later. The combination gave the highest percentage of good analgesias—95 per cent. With sodium amytal or nembutal or with either with hyoscin the patients are restless. In 750 cases at various hospitals, less than four per cent of the babies required resuscitation and all recovered with slight stimulation.

Almost all of the **other barbituric acid compounds** have been advocated at one time or another, especially luminal, but generally the literature is against them.

Avertin is administered 60 milligrams per kilo of body weight. The literature generally opposes its use. At the Brooklyn Jewish Hospital, the full effect of the drug is achieved almost the instant it is instilled; the effect of the drug is satisfactory for about two hours; post partum hemorrhage occurred in 32.5 per cent of the cases, the uterus remaining soft, flabby and not well contracted.

Gwathmey analgesia is satisfactory if analgesia is all that is desired; amnesia was obtained in eight per cent of the cases. In some instances, the Gwathmey slowed labor. One of the chief difficulties was in getting the patient to retain the instillation.

PECAN KERNEL IN BRONCHUS OF BABY; BRONCHOSCOPIC REMOVAL; DEATH

MAYO ROBB, M. D.
Phoenix, Arizona

A boy, two, while eating pecans suddenly began to cough and "sputter." Realizing at once that a nut may have gone down his trachea, his parents immediately turned him head down and patted him upon the back, encouraging him to cough. A few pieces of pecan were coughed up.

In a short time the child had fever, shortness of breath and severe cough. The temperature the next day was 104°. These symptoms continued, the cough being most pronounced. The parents believed the child had a severe cold and gave him home remedies. Dr. Fred Jordan diagnosed a foreign body in the left bronchus and referred the patient to Dr. Howell Randolph.

Fluoroscopic examination revealed density along the left heart border consistent with atelectasis or inflammation of the middle half of the lower left lobe. The sounds on the left were much reduced without change of resonance and with no evidence of bronchial breathing; the breath sounds were distant. General condition was good.

Dr. Randolph referred the child for bronchoscopic examination. A bronchoscope five mm. by 30 cm. was passed, seven days after the accident, into the left bronchus. The mucous membrane of the larynx and trachea was highly edematous. Secretions and congestion interfered greatly with visibility. The pecan was, seen in the lower left bronchus, dislodged with the distal end of the bronchoscope, expelled through the tube and, lodged on a lens of my eye glasses. No other pieces of pecan were seen. The operation required about 10 minutes.

Dr. Randolph immediately observed that the breath sounds of the left lung were normal and equal to those of the right. The child seemed to breathe easier. It gradually, however, developed hoarseness, croupy cough, difficult breathing and frequent heart rate.

The next morning the child was extremely

restless; breathing was much embarrassed in both phases with marked retraction at the suprasternal notch, the interspaces of the ribs, the epigastrium and the lateral borders of the neck. He was cyanotic and temperature and pulse were greatly increased. A tracheotomy was done. Emphysema appeared in the soft tissues of the thorax and neck. The dyspnea was relieved for about an hour. The child was placed in an oxygen tent, but death came two days after the pecan was removed. An autopsy was not permitted but the chest was x-rayed.

Dr. Mills reported: Pneumothorax exists on both sides and the right lung in the midportion shows slight diffuse density; the left lung appears to be elevated from the diaphragm. There is emphysema of the soft tissue of the thorax and neck.

The question naturally arises as to the cause of the complications and death. As a general rule foreign bodies in the bronchi if not removed are fatal. About three per cent of bronchial foreign bodies are coughed up. Inorganic bodies may remain in a lung for years and cause no damage. In Jackson's clinic I saw a patient who had had a fish bone in his bronchus for 12 years; his condition had been repeatedly diagnosed as tuberculosis.

Organic materials in the air passages quickly set up violent reactions, especially in children. Jackson has termed this vegetat bronchitis, and it causes the child to drown in its own secretions. Undoubtedly the edema in the larynx would have caused obstructive laryngeal dyspnea and promptly caused death had not the tracheal cannula been inserted. The fatal dyspnea was due to edema of the bronchi.

In tracheotomy the third, fourth and fifth rings are cut; emphysema of the soft tissues of the thorax and neck frequently follows tracheotomy and as a rule is of no consequence. It is possible, however, for subcutaneous air to pass under the deep fascia and aided by negative lung pressure to enter the mediastinum resulting in pneumothorax. A leading bronchoscopist recently informed me that he has seen a few such cases.

EXTENSIVE INJURIES (CASE REPORT)

GUY FRENCH, M. D.
Phoenix, Ariz.

(Presented before the Staff of the Good Samaritan Hospital.)

A girl, 19, injured in an automobile accident, lived 11 days with extensive damage to liver, kidneys, and chest.

Past history was unimportant except that she had suffered from sinus disease and had had a nasal operation two weeks prior to the accident.

She entered the hospital in shock complaining of pain in right side and shoulder. There were many lacerations of the body; the most important were deep, irregular lacerations over the forehead, nose, and lips—no apparent skull fracture. Pu'se was 108, extremely weak. Blood pressure after giving caffeine sodium benzoate and morphin was 50/35.

The next morning a dislocation of the right acroma-clavicular joint was reduced and retained with adhesive. There was crepitation of the subcutaneous tissue in the right axilla over the fourth and fifth interspaces. The right chest was hyper-resonant; no breath sounds were heard. Pain was produced by pressure over right chest and kidney areas. Abdomen was rigid and tender in lower portion. Manipulation of cervix caused pain in lower abdomen. A profuse vaginal discharge was present.

Right chest was strapped and 500 c.c. of blood were given intravenously.

The second morning blood pressure was 100/60; pulse 110; abdomen was slightly distended with gas; patient was much improved. Consultant advised no operative procedure. She improved for four days; then she was irrational at intervals.

The erythrocytes on admission were 3,390,000 with 55 per cent hemoglobin; two leukocyte counts on day of admission were 40,000 and 42,000. After transfusion erythrocytes were 3,490,000, hemoglobin 70 per cent, and leukocyte 18,500. Urine was negative except for clumps of leucocytes. The temperature varied from 98 to 103 on the 6th day, when she developed suppurative parotitis on the left side. This was opened under local anesthesia.

During this interval she developed marked emphysema of the whole right chest and neck.

X-rays showed fractures of the 4th and 7th ribs of the right side of the chest posteriorly, with hemopneumothorax. About 300 c.c. of dark blood were aspirated from the right chest and the next day about 50 c.c.

The patient's chief difficulty was gaseous distention of the abdomen. Hypertonic saline in the vein, Epsom salts enemas, pitressin and hot stupes gave some relief.

On the eighth day marked edema of the legs, feet and labia developed with suppression of urine, irregular and weak heart and marked abdominal distention. The leukocytes went up to 35,000 with 90 per cent polynuclears: the erythrocytes were 2,500,000 with 55 per cent hemoglobin. Digitalis and a small transfusion were given. The rectal temperature ranged from 99 to 101, and the pulse from 100 to 120. Respiration which had been 40 the day before the aspiration of fluid, became 20, occasionally rising for short intervals to 28. Late during the day she began to pass urine. Distention was relieved for a time. Urine showed many pus cells and many erythrocytes. On the ninth day all symptoms were worse; she was placed in an oxygen tent but she expired during the morning of the 11th day.

Autopsy Report: There were numerous contusions of legs, arms, hips, and lacerations on the forehead and between the eyebrows. (Permission was only for opening the abdomen.) There is a large quantity of free bloody fluid in the peritoneal cavity. The intestinal tract is slightly dark and discolored, but there is no evidence of rupture or inflammation. The right kidney shows extensive subcortical and interstitial hemorrhage extending into submucosa of the kidney pelvis. The kidney is greatly enlarged. Capsule is dense, but not perforated. The left kidney is similar to the right with less hemorrhage. On the left there is post-peritoneal hemorrhage in the perivertebral space. The liver is lacerated and has interstitial hemorrhage. The right lobe is macerated and a considerable portion of it is entirely destroyed. The blood extends over the convex surface of the liver and beneath the diaphragm. The x-ray shows fractures of the 4th and 7th ribs posteriorly, with pneumothorax of lung, probably hemorrhage into p'eural cavity. There is

emphysema of the right chest wall and shoulder girdle, extending into the neck.

The interesting features of this case are the extensive lesions of the liver, lungs, and kidneys, hemorrhage into the various organs, many other lesions and the length of time she lived after injury.

ALLERGY IS A PROBLEM FOR EVERY PHYSICIAN

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Phoenix, Arizona.

(Presented before the 53rd Annual Session of the N. M. Med. Soc., May 23-25, 1935, Albuquerque.)

Allergy is far more common than ordinarily suspected; early allergy responds satisfactorily to proper treatment which then is ordinarily easy.

I have been allergy minded for years and yet I have many times overlooked allergic conditions. The mistakes that I have made in this direction far exceed those in which I wrongly suspected it. Because a person is allergic does not in any way preclude his having organic disease but rather may argue for it. Those with outstanding organic disease are prone to have allergic complications, proper treatment of which may afford relief of distressing symptoms.

The teaching has been that allergy is inherited; this is true—to an extent that the more allergy in the history of the forebears the more likely is a person to become allergic and early in life; persons with no history of allergy in their forebears, however, do become allergic.

Careful surveys by competent allergists of several communities have invariably shown a high per cent of the populations with manifest allergy, ignoring the minor and unsuspected manifestations.

There is no dispute that long established allergy as a rule is notoriously difficult to cure and that that of short duration usually responds to correct treatment. Every physician should be allergy minded, then, so that treatment may be started as soon as possible after the onset of symptoms. Advanced cases of allergy should be recognized and usually referred to physicians especially trained in allergy; proper persistent, difficult often discouraging,

treatment may give good results. The novice in allergy as a rule will not persist in treatment to get results.

A perusal of the literature shows that a large number of conditions are proven to be, and many others suspected of being, allergic in etiology; among those which are mentioned in the literature are the following: Arthritis, alimentary bleeding, angioneurotic edema of skin, tubes, bladder, intestines, etc., angina pectoris, angiospasm, anuria, anesthesia, aching, amblyopia, asthma, bladder swellings, Bernier's prurigo, canker sores, cardiac irregularities, chafing, cholecystitis, coated tongue, cardalgia, colic, confusion, colds, coma, constipation, cough, croup, cramps, cyclic vomiting, corneal ulcer, diarrhea, dermatitis, delirium, dizziness, dysmenorrhea, dreamy state, distension, dermatographia, edema, enuresis, erythema, epilepsy, eosinophilia, erythema multiforma and nodosum, eye pain, eczema, fall in temperature, frequent respirations, fatigue, feeding problems of infancy, fever, flakes in cornea, frequency of urination, functional albuminuria, gall bladder pains, gastro-intestinal symptoms, giddiness, glaucoma, heart burn, hysteria, hypotonia, herpes zoster or labialis, hypertension, insanity, intermittent hydroarthrosis, infantile colic, iritis, interocular hemorrhages, joint symptoms, loss of blood coagulability, lethargy, lassitude, mania, Meniere's disease, migraine, menorrhagia, mental confusion, mental dullness, neuralgia, nasal hemorrhage, nervousness, nausea, neuritis, numbness, necrotic spots, olfactory hallucinations, nephritis, paroxysmal tachycardia, psoriasis, purpura hemorrhagica, pruritis, papillitis, pyloric obstruction, pylorospasm, personality changes, pulmonary circulation obstruction, peptic ulcer, pyloric spasm, pyrosis, painful eyeballs, rapid pulse, restlessness, rheumatism, rhinitis, sour stomach, syncope, strabismus, sneezing, scanty menstruation, transient paralysis, trigeminal neuralgia, transient mania, tremors, untimely menstruation, urticaria, vertigo, vomiting, wet noses, writer's cramp.

I wish not to leave the impression that I regard all the conditions enumerated as allergic; certainly a number of them are and others are, at times, entirely or partially. This list does not include all conditions caused or influenced, by allergy. It has been said, and it seems to me correctly, that allergy may strike any part

of the body. Wilson names allergy the "mocking bird" of human disease.

I have said before, that whenever there are symptoms out of proportion to the discoverable etiologic factors, be on the watch for sensitization processes. When discovered early and treated promptly results are gratifying. I could cite hundreds of such cases. For example: Bronchitis of short durations—even following definite colds—and unexplained coughs, will often disappear by administering digestants or by changes in diet, or both. Thousands of cases of asthma could be saved every year if physicians generally recognized this palpable truth. The same may be said of eczema, epilepsy, fainting attacks, migraine, many cardiac irregularities, paroxysmal tachycardia, even insanity and many other unusual manifestations without evident pathologic organic changes.

My plea is that all physicians attempt to become allergy-minded, not to become allergists but to become better general practitioners, and better specialists generally.

I sound this warning: In the chronic allergic results will usually be discouraging except in the hands of the allergists and even then are apt to be discouraging unless the patients cooperate fully and intelligently—as the "nigger" in jail said—"from now on."

Especially is it to be emphasized that allergics have organic diseases, which should not be overlooked by the allergist; and persons with or without organic diseases have allergic manifestations, unsuspected in most instances, which should be thought of and treated by the physicians in charge of the cases.

ALLERGY:

Problem of Immunity, Digestion, Endocrines and Metabolism

ORVILLE HARRY BROWN, M. D.
Phoenix, Arizona.

(Presented before the 53rd Annual Session of the N. M. Med. Soc., May 23-25, 1935, Albuquerque.)

This paper is to emphasize the apparent trend of thought regarding fundamentals in allergy—derived from personal experience and from study of the literature.

The processes enumerated in the title are

fundamental activities of all living matter. Anything that lives must grow, digest, dispose of waste and protect against other living things which might use it to grow upon. Therefore it is not far fetched to include these four processes in one title, and to intimate relationship.

Having been able in a number of cases to effect complete relief of definite allergy solely by improving digestion, through administration of digestants, I have come to the conclusion that many allergic reactions result from an accumulation in the tissues of improperly digested proteins.

Allergics ordinarily have hypochlorhydria, which predisposes to an absorption of incompletely digested proteins into the tissues; but non-allergics also have hypochlorhydria and hence must absorb excess amounts of incompletely digested proteins into their tissues; since they display no allergic reactions, they must have a chemical mechanism, which is lacking in the allergic, and which effects destruction of undigested and partially digested proteins which reach the tissues or otherwise disposes of them. In other words, it seems that allergics lack a chemical, or chemicals, of their tissues which destroy proteins. Allergics may be compared to diabetics; the diabetic lacks insulin; the allergic lacks an unknown chemical—one which metabolizes incompletely split proteins. Just what this substance is, which the allergic lacks, is speculatively.

The literature is replete with suggestions. Many cases of one or another type of allergy are cured, or at least relieved, by removal of focal infections or by administration of vaccines, or both. This suggests an immunologic feature of the problem. Bacterial toxins may directly depress metabolism, or they may depress the function of an organ, for example an endocrine gland, which supplies a hormone governing metabolism; they may also affect digestion, especially when the bacteria are growing in the nose and throat, hence being constantly swallowed. Bacterial proteins serve as allergens; since sensitization to one protein renders a person more likely to become sensitive to others, bacterial protein sensitiveness may lead to the development of food and other sensitizations.

Cases have been strikingly benefited by ad-

ministration of extracts of endocrine glands or hormones. Certain authors have waxed extremely enthusiastic over one or another organ extract as a cure for allergy. There is certain research work, notably that of Manwaring, which would implicate the liver as being deficient in its ability to destroy allergens. It may be that such individuals are naturally deficient through heredity in these metabolic hormones; or infection may affect the organs supplying the hormones to reduce their amounts.

Marked benefit, if not cure, has been effected by administration of one or the other vitamins, by quartz light or sunshine. Vitamins may be considered as plant hormones and therefore analogous to endocrine hormones and concerned in the metabolism of the body. Then, too, as it is necessary often to place patients on limited diets the supply of vitamins must be augmented.

To cure allergy: Discover all foci of infection; remove them, using careful judgment not to do more harm than good; discover the bacterial proteins to which one is sensitive; make a vaccine and give small doses—gradually increased; discover all other allergens; eliminate them when and if possible or raise tolerance to them; improve digestion especially if foods are found to be supplying allergens; administer vitamins and hormones to raise one's metabolism to the point where the allergens in the tissues are destroyed.

To be an allergist, then, one must first be an internist in order to discover the foci of infection, the needed vitamins and give vaccines; and at the same time he must be an endocrinologist in order to supply the proper hormones.

BOOK REVIEWS

Examination of the Patient and Symptomatic Diagnosis by John Watts Murray, M.D., Second Edition; The C. V. Mosby Company; St. Louis, Mo.; 1936; Price \$10.00.

This is a book to assist physicians not to overlook anything that may help to establish a correct diagnosis. For example: In discussing pain, the author asks the question, "Is there a pain in the chest?" Then he refers to section one dealing with pain in the thorax; under question two, is there pain in the region of the breast bone (it would seem better if he had used the word sternum) he discusses the possible causes of such pain and mentions such diseases as coronary occlusion, asthma, angina pectoris, aneurysm, myocardial diseases, spinal apoplexy, etc. He discusses pain in the region of the heart and gives the possible causes of the heart pain in the axilla and in this way

he deals with a great variety of subjects any one of which might be extremely helpful to a physician.

It appears to be an extremely valuable book, one which all physicians should have on their desks.

Surgical Clinics of North America: Issued serially, one number every other month; Volume 16, Number 1; Chicago number; February, 1936; 356 pages with 78 illustrations; per clinic year February, 1936, to December, 1936; Paper \$12.00; Cloth \$16.00 net; Philadelphia and London: W. B. Saunders Company; 1936.

This is the first number of the 1936 series and is a new type of clinical presentation. In this and in the future numbers a symposium will be presented upon a surgical subject of general interest. The symposium in this issue is on cancer of the cervix, but there are also other interesting articles such as surgery of Closed Abdominal Wounds, Congenital Obstruction of the Bile Ducts, Sprains, The Management of Fractures of the Jaws, Inflammatory Tumors of the Cecum Simulating Acute Appendicitis, The Treatment of Torticollis, Gangrene, The Injection Treatment of Hemorrhoids, and Minor Surgery about the Eye. All of these articles are interesting and especially valuable to surgeons.

ALLERGY OF THE NOSE AND PARANASAL SINUSES, French K. Hansel, M. D., M. S.; Assistant Professor of Clinical Otolaryngology, Washington University School of Medicine; Fellow of the Association for the Study of Allergy, The Association of Resident and Ex-Resident Physicians of the Mayo Clinic, The American Laryngological, Rhinological and Otolological Society, and the American Academy of Ophthalmology and Otolaryngology; The C. V. Mosby Company, St. Louis, Mo.; 1936; \$10.00.

This is a book of 820 pages. The author recognizes the wide field of allergy stating that it is the predominating symptoms which send patients to internists, gastro-enterologists, dermatologists, ophthalmologists and otorhinolaryngologists. He says especially is allergy an important part of rhinology.

This book is divided into 35 chapters. It has 58 illustrations. He first presents the fundamental principles of paranasal sinus disease, then discusses all diseases of the nose and throat, bacteriology of the nose and paranasal sinuses, and gives the cellular reactions of the tissues, histology and histopathology of the nose and paranasal sinuses in allergy and infection; he discusses in detail the relation of allergy to the acute and chronic inflammatory disease of the nose and paranasal sinuses.

The general discussion of allergy begins in chapter eight with such subjects as the relationship of allergy to foreign serums, the origin and development of allergy, biochemical and other changes, methods of testing, history taking, specific manifestations of allergy, nasal manifestations of allergy such as bronchial asthma, hay fever, and treatment of hay fever.

The book deals with the entire subject but especially with allergy of the nose and throat. It is a splendid contribution to this new phase of medicine. Unfortunately the book does not contain an authors' index; the subject index, however, seems to be as complete as possible. Even though this is written especially from the standpoint of the ear, nose, and throat physician, it is a treatise of the entire subject and hence we recommend it to every physician. The work of the publisher is splendid.

SOUTHWESTERN MEDICINE

Printed by THE A. C. TAYLOR PRINTING CO., Phoenix, Arizona
Published monthly for the Board of Managers of the four constituent societies.

VOL. XX.

MAY, 1936

No. 5

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EDITORIAL POLICY

Southwestern Medicine is owned by four medical organizations each electing two members to constitute the board of managers which controls the entire policy of the journal. Because of geographical difficulties meetings with all members of the board in attendance are nearly impossible. The annual sessions of the Southwestern Medical Association which all members might be expected to attend affords the most logical time and place for such meetings. There have been two meetings since we have occupied the editorial chair; neither has had full attendance. The business of the board mostly must be transacted by correspondence. We not only desire but encourage every board member to freely offer suggestions or criticisms which we shall gladly submit to the other board members. One board member, Dr. C. R. Swackhamer, has manifested his interest by repeated suggestions and counsel through conferences with us.

The authors of papers presented before the annual meetings of these four organizations have a right to have their papers published in Southwestern Medicine, as well as have any of our members who give papers before county societies, hospital staff meetings, and other scientific organizations in our district. It is expected that an article will have the merit of new thought, new observations, or other data not available in text books.

The income from advertisements and subscriptions is barely adequate to permit printing the almost 40 pages which we now issue each month. More papers are presented for publication than could be published unless all papers are carefully edited. Our policy is to deal fairly with each organization and with

each author. This does not mean that the space must be divided evenly between the four organizations, but rather that special favors shall not be shown to any organization. In order to have room for the scientific articles which are submitted for publication it is necessary to conserve space and hence to "boil down" papers as much as possible without changing the author's meaning or without materially altering his style. This is done with the approval and instruction of the board of managers. By this program it has been possible to publish a number of articles and other interesting features which otherwise would have been crowded out.

The state of our residence must of necessity get more of our individual efforts in news and medical annals gathering than does New Mexico or El Paso County; the associate editors, however, should be able to do as much for their divisions.

We are positive that no officer of any of our associations, understanding our problems in trying to be fair to each organization and contributor, of trying to publish all the meritorious papers presented to us, of trying to edit each paper so that the author's meaning is presented in the fewest possible words—in the least possible space—and in the best style, would ask or expect us to treat him or his organization differently than we treat others.

In "boiling down" contributions we have had almost universally the commendations of contributors; only two or three have offered objections to our editing of their papers. Undoubtedly we have destroyed at times fine shades of meaning which the authors had hoped to convey. We flatter ourselves, however, that we have often improved the authors' drafts of papers.

We wish everyone to have a spirit of cooperation and at least a slight appreciation of the difficulties and magnitude of our task.

THE GUAYMAS TRIP

Sixty-three persons in three pullmans made the trip from Nogales to Guaymas leaving immediately after the close of the meeting on Saturday, April 25. They were accompanied by a representative of the Southern Pacific Railroad and 20 soldiers as guards to see that the trip went without untoward incidences. Dr. Hogeland, president of the Nogales County Medical Society, who is thoroughly familiar with Mexican ways and Mexican people, went along to be of such assistance as possible.

Those who made the trip lived in their pullmans. One of the largest hotels in Guaymas was thrown open so they could be fed. A banquet was given in honor of the visitors. Everyone reported a good time and good fishing; enormous catches were made.

THE NEW OFFICERS

President-elect for the year is Dr. C. R. Swackhamer of Superior; Dr. W. C. Cain of Yuma is vice-president; and Drs. Harbridge of Phoenix and Yount of Prescott were re-elected secretary and treasurer respectively. More information on the officers will be given in the next issue.

NOGALES MEETING OF THE ARIZONA STATE MEDICAL ASSOCIATION

As stated in the previous issue, the Santa Cruz County Medical Society attempted to thoroughly sell this year's session of the state medical meeting. While we have not had official figures as to the number in attendance, it was rumored that the attendance was the largest that any state meeting has ever had. This small county society has set a pace for other host societies to attempt to live up to. They were active months in advance of the meeting doing everything possible to create interest in the meeting. Every arrangement was carried out according to well thought-out plans.

Every physician arriving in Nogales was given a number of pieces of literature. The envelope containing this material bore the words, "Welcome, Doctors and Ladies. May your visit with us be thoroughly enjoyed. With the sincerest wishes of the Santa Cruz

County Medical Society." On the other side of the same envelope was an advertisement of one of the Mexican Curio shops.

Among the articles in the envelope was one which stated: "If we may be of any service in any capacity at any time during your visit in Nogales, don't hesitate to call on us; our telephone numbers are listed below." Then followed a list of doctors and their office and resident phone numbers. The names are: Drs. and Mesdames, F. T. Hogeland, Z. B. Noon, E. C. Houle, J. S. Gonzales, A. L. Gustetter, C. S. Smith, W. F. Chenoweth, J. H. Woodard, T. G. Reynolds, M. I. Merritt, J. E. Urriolagoitia, Fernando Valdes Banda, Romo de Vivar Jose, Joaquin Rincon, Luis Mercado and Drs., Antonio Alcantar, J. Sandoval, and L. Carrada and T. B. Fitts.

The papers were of high class and created a great deal of interest among those in attendance. Each speaker had a good audience. All entertainment was superb. An outstanding feature of the entertainment was the special edition of the newspaper containing 16 pages devoted largely to the discussion of the meeting and the men in attendance. It carried a large number of photographs of physicians.

We have two purposes for this editorial: to compliment the Santa Cruz County Medical Society for the splendid way it promoted this meeting and entertained its guests, and to show to other organizations what can be done in this direction.

An unusually meritorious article by Dr. D. F. Harbridge is being reprinted in this issue although contrary to our policy to print articles which have appeared elsewhere. This paper, however, points out such important factors in the relation of the state medical societies to the American Medical Association that we hope that every member of our organizations will read it. It is not only to the point, but it is written in excellent style.

The American Association for the Study of Goitre meets in Chicago June 8th, 9th, and 10th. An inspection of the tentative program assures one that the meeting will be one well worth attending. Such names as Lahey, Hertzler, Plummer, Collip, and others equally renowned should assure keen interest in the program.

The American Association for the Study and Control of Rheumatic Diseases is meeting at the Phillips Hotel in Kansas City May 11th.

Dr. George W. Stephens, former superintendent of the Arizona State Hospital and a close friend of the late Gov. George W. P. Hunt, died Sunday, April 28, 1936 in a New Orleans hospital of a heart ailment.

Dr. Stephens was born in Natchitoches, Louisiana in 1879, son of J. H. and Isabella (Whitfield) Stephens. He attended Louisiana State Normal College, graduating in 1901 and completed classical studies in Louisiana State University. He received his Doctor of Medicine, with special mention, in 1907 from the Tulane University.

In 1907-08 he entered tropical service during a yellow fever epidemic and spent some months in Central America, doing research work. He became pathologist and medical director of the East Mississippi Insane Hospital where he served until 1911. During this latter period he also served as professor of chemistry at the Mississippi Medical College. He came to Phoenix, Arizona, as assistant superintendent of the Territorial Hospital for the Insane. From 1913 to 1917 he served as surgeon and captain and medical inspector of the Philippine constabulary. During the World War he entered the Royal Army Medical Corps of England, commissioned captain. After the armistice he became neuro-psychiatric officer for the insane at Fort St. Nicholas, France. In 1923 he was made superintendent of the Arizona State Hospital, serving until January, 1933 with the exception of a two-year period during which he was associated with a Wisconsin institution for mental cases. Upon leaving Phoenix he became superintendent of the New Mexico hospital for the feeble minded. Later he went to Louisiana.

He held a commission as major in the Medical Officers Reserve Corps, United States Army and was for several years chief medical officer of the general staff of the Arizona National Guard. He also served as neuropsychiatric specialist for the American Legion rehabilitation committee for the 12th district.

He was a Fellow of the American Medical Association, and of the American Psychiatric Association, member of Association of Military Surgeons of the United States Army, Medical

Society of Milwaukee, Association of Officers of the U. S. Army, National Guard Association, American Legion, British Legion, Ypres League, honorary member of Veterans of Foreign Wars and received two British service medals; he was presented with a British certificate stating that he was among the officers who saw service "in the immortal defense of Ypres on the western front in the great war for civilization." He was a member of Masonic Order, Nobles of the Mystic Shrine, Elks, Hiram Club, Rotarians, Alpha Kappa Kappa. He took an active interest in the work of the Phoenix Chamber of Commerce.

His hobbies, aside from his profession, were antiques, of which he had an extensive and valuable collection, gathered from the far corners of the world, and amateur photography. He possessed several thousand interesting pictures taken by himself in many parts of the world.

Dr. Edwin Seymour Miller, Arizona pioneer and one of the state's oldest physicians, and Flagstaff community leader, died shortly before noon Wednesday, April 29, 1936, after an extended illness.

A resident of Flagstaff for 40 years, Dr. Miller was widely known throughout northern Arizona. His private practice extended into many northern Arizona towns. He was often called Arizona's second oldest practicing physician; he was 78 years of age.

For years Dr. Miller was local surgeon at Flagstaff for the Atchison, Topeka, and Santa Fe railroad. He also served for a time as Cocino county health officer and as head of the Flagstaff municipal health department.

Dr. Miller was a 33rd degree Mason and a past grand master of the grand Masonic lodge of Arizona. He also was master of the Flagstaff lodge and a member of Ivanhoe commandery No. two of the Knights Templar in Prescott.

Three years ago, Dr. Miller, who had been in ill health for a long period, came to Phoenix to make his residence at St. Luke's home on North 18th Street. At that time he discontinued active practice of his profession.

Dr. Miller, who was never married, is survived by a sister in North Dakota, where he lived prior to coming to Arizona.

C. R. K. Swetnam
President

ARIZONA STATE ASSOCIATION DEPT. D. F. Harbridge
Secretary

The Urgent Need for a More Concerted Alinement of the Medical Profession Leading to a Stronger Fundamental Dominance of the American Medical Association

D. F. HARBRIDGE, M. D.

Secretary, Arizona State Medical Association
Phoenix, Arizona.

Today, as it has been from the beginning of time, the mind of man is changing; it is groping for new standards of conduct, for new methods of applying age-old principles, many leading to unsocial and dangerous conclusions. One has been witnessing during these past few years a world and a nation in a state of transition and doubt from which will come both the true and false values of human welfare. Unfortunately the medical profession is exposed to all manifestations of social unrest and change. It is with the purpose of achieving permanent benefits from the present condition of our times that the medical profession should vitally concern itself. We, as members, must insure, not only for the present but for the future as well, the continued determined progress of medicine as a science and defend it from the fallacious economic attacks so strong today. It is determinate on us to do this now or accept the consequence of inaction. Because the need is overwhelmingly great, our guild faces but one alternative—a closer, more personal and more sincere alinement of all medical groups resulting not only in credit to the Association and to medicine but also in definite benefit to humanity as well.

As I have stated the trouble and hinted at the remedy, permit me to elaborate on the latter. One lives in an intensely complex environment controlled and hampered by a multiplicity of laws, conventions and governing forces. As all men know, the need is for greater simplicity in living and, to be specific, for a return to a more simple conduct of government. It is quite true that one comes into the world alone—born intensely individual—and that one leaves in the same manner. One lives as an individual, but, in order to benefit and to live fully certain individualistic expressions are submerged so that one can obtain others of a higher and more beneficial nature. In this light, the medical profession, enamored by a multiplicity of groups within itself, stands in need of simplification.

In regard to organized medicine in this nation today one finds a lack of coordination in thought together with a complex number of societies which are not receiving the benefits of a strong guiding

hand as exemplified by the American Medical Association.

There are two paramount dangers in the ascendancy threatening medicine—the ever-present apathy of certain physicians in regard to ethical standards for which the Association has so long fought and the ominous rumbling of economic disorder, which has become a prime topic of thought with the medical profession and with the lay public as well. These dangers must be attacked and repulsed.

To enjoy our divinely individualistic qualities we must submerge the least beneficial; we must eliminate complexity in the nation's medical organization and give to the American Medical Association its rightful leadership. With this will come a re-dedication of allegiance to our medical constitution, a closer communion of thought and understanding between medical men and equally as vital, a more intense faith in the abilities for progress inherent in the American Medical Association. To forestall any possible misinterpretation, let me refer more concretely to the permanence of our medical constitution. Human values are adjudged by standards; the Christian faith has its Sermon on the Mount, Christianity's basic religious theme. No one harbors a desire to change these fundamental concepts. Likewise organized medicine has subscribed to a standard of values—a constitutional document adopted at the St. Paul meeting in 1901 the tenets of which stand today as a set of sound principles serving well both the medical profession and society. Again let me emphasize the importance of our allegiance to this same constitution and the recognition of its values to the profession in this period of uncertainty.

I agree with a personal opinion expressed by Dr. Olin West, our honored Secretary and General Manager, who says (quote): "Until we fully realize that one basic organization of physicians in the United States must be ascendant, our troubles are going to continue if they do not multiply."

At this moment the diversified rather than the centralized support of the physician as relates to medical groups stands as an obstacle to the fulfillment of the aims and purposes of the American Medical Association. To illustrate the point, a physician of my acquaintance maintains a membership in eight separate medical societies at an average annual cost of \$124 in dues. Such societies hold annual meetings. Is it conceivable that the average physician can take the time from his practice to attend this array of meetings? What a futile overlapping of executive effort! Frankly, there is too much waste here to justify the existence of so many special groups, all of

which again minimize the power and influence of the American Medical Association.

The frequent comment is also heard that the parent medical body is too far distant in its actual functions from the average physician and that the American Medical Association expects a great deal from the rank and file in asking a blind sort of following. But has not the physician himself created these obstacles by setting up various groups, thus dividing his attention and support from the central organization? Let us take a forward step and through our representatives to the House of Delegates recommend that a method of friendly absorption of these numerous societies by the American Medical Association be considered.

A further step in securing a more concerted alinement of all medical groups is to consider sectional meetings of the Association in addition to the annual sessions at which the House of Delegates functions. The state associations could serviceably be divided into, let us say, six sections, namely, the Northeast and Southeast; the North Central and South Central, and the Northwest and the Southwest. Let the Northeast section, for example, meet with the Southeast section for a session, followed by a meeting with the North Central section another year, and so on until there has been a complete interchange of meetings among the six sections. To concentrate more fully, the two Pacific Coast sections may also attend meetings with the two central sections, thus there would be three groups in conference at one time. In all this a more helpful interchange of ideas and a more complete understanding of medical problems would be engendered among the membership. All physicians would thus have opportunity for more frequent contact and at the same time their sense of proprietorship in their organization would be materially enhanced. Sessions open to the public would properly acquaint society with the true intent of organized medicine. These meetings would in no way lessen the popularity of the present annual sessions of the parent body, but, to my mind, would increase the Association's hold over its complete membership.

If special travel arrangements, or a large clinical congress or the conduct of more exclusive groups of special branches with particular requirements are found desirable in connection with sectional meetings, let it all be so, but let all be completely under the jurisdiction of the American Medical Association. The details of such sectional meeting together with their auxiliary activities, as well the methods of financing, would require careful study and thought. In all probability a modest registration fee, the amount of which would not equal in any measure the total of dues paid annually to the present multiplicity of societies, would finance the meetings.

Certain states, such as New York, Pennsylvania,

Iowa and others have excellent facilities within their organizations which afford opportunities for scientific and social contact. The speaker is aware that a plan for sectional meetings, of a similar nature as proposed here, was considered and rejected by the American Medical Association several years ago. Despite the latter fact, I am persuaded that this plan, together with an effort toward an acceptable absorption of many concomitant societies, must be undertaken if the future dominance of the American Medical Association and its constituent societies is to prevail.

With this simplification of the nation's medical organization, the American Medical Association will find itself even more closely in touch with the field of actual practice and, conversely, the physician will be enabled to contact more intimately the leaders and directors of medical thought, hence both loyalty and understanding will be strengthened.

To continue this thought, in the present scheme of medical management it is the practice for county societies to solve their local problems, for state societies to care for state-wide questions and for the American Medical Association to be responsible for all national affairs. To avoid confusion this alinement should continue in operation. I do feel, however, that the American Medical Association will be effectively enabled in getting its national economic and social program over to the membership through these suggested sectional meetings. The membership in greater numbers will hear all pertinent questions and current problems discussed by those specifically qualified and trained in such discussion. The power of the spoken word is far greater than that of the printed word by way of The Journal, the Bulletin or printed reports, which now afford many of the membership practically their only contact with matters of the Association.

The Bureau of Medical Economics of the American Medical Association stands ready at all times to advise with the state and county societies relative to local, state or national problems. A very earnest effort is made by the Association to make available to every member information concerning official actions of the House of Delegates through the printed annual report of the deliberations of that body, through The Journal and through the Bulletin. In addition, thousands of letters go out from the central office year after year. Yet this service does not reach the member in a way that satisfies his craving for the personal contact. The member, as it is, pays too little attention to all this printed material that finds its way to him through the offices of the American Medical Association. Two aids suggest themselves here. First, each member should possess a copy of the Constitution and By-Laws and, as occasion requires, copies of additional special documents. The attention of the membership

would be more directly commanded if this material could be mailed from state headquarters at state expense rather than from the national office. Second, for the sake of uniformity in certain matters, the model forms, as submitted by the American Medical Association, should be accepted and adapted to the specific needs of states and counties. The smaller state organizations are especially in need of this paternal supervision and guidance.

Lastly, and certainly of very vital importance, the most far-reaching benefit to be derived from a close alinement of all medical groups will be the better opportunity afforded for indelibly impressing the principles of medical ethics on the recalcitrant physician and on society as well. More and more the medical profession is being troubled by the unethical practitioner within its own ranks. More and more society is of the mind that medical economics means a bank-roll for the physician and bankruptcy for the people and that medical ethics is a grand something which serves the physician well but the public not at all. Some better way than is now afforded must be found whereby the unethical practices are controlled to the point of elimination and whereby the public shall be brought to realize that medical ethics is a helpful instrument serving the people first. Without ethical medical organization the public could not safely be served; without it the ethical physician could not exist.

To leave the matter of the unethical physician or group physician for the local society to handle is good up to a certain point. The larger communities possibly can handle such problems without having the eyes of the populace fixed on them, as diversified community interests claim a proportionate share of attention. In the matter of smaller neighborhoods this is not the case. The medical society and the members bringing and enforcing charges against an unethical colleague become a virtual sacrifice for the benefit of organized medicine. The public of the small community is loath to condone "kicking out" (as they term it) any man from his work, especially in these times of unemployment. A way should be provided for establishing a system whereby the local society may turn its case over to a more remote state organization and for the state, in turn, to appeal to a special group of the national body for an impartial ruling on the case in hand. Chapter XI, Section 12 of the Constitution and By-laws of the American Medical Association gives power to the House of Delegates, on recommendation of the Judicial Council, to act in such situations. This feature should be more actively emphasized by calling on the Council to act more frequently. Sectional meetings will serve in placing the unethical practitioner in his true light. By reflection, he will be known for what he is and

will be forced into channels of ethical practice in order to subsist.

In conclusion, I reiterate an appeal for a more concerted alinement of all medical groups. I agree with Dr. Walter L. Bierring, who in his address to the House of Delegates at Atlantic City last June stated:

The ethical conduct of the physicians in all relations to colleague and patient has always been governed by precept and example, and to keep the professional shield untarnished is one of our sacred obligations to our guild and to society. A slip here or there may give cause for criticism from a not too indulgent public and easily reflect on the profession as a whole . . . By unity of effort in conjunction with constituent state and component county medical societies (the profession shall) keep in the pathway of progress and meet the challenge of a changing world.

To supplement these remarks, attention is called to the fact that some of the Eastern colleagues do not have the same point of view as the members in the far Midwest and extreme West. Many of the communities in these sections are sparsely settled. In one county in Arizona, larger than Belgium, there is a functioning society of three members. Distances between points are great.

The Arizona State Medical Association has a serious problem in maintaining interest and in serving as a link with the American Medical Association. We solicit the assistance and dominating influence of the parent body. It seems to me we should be deferred to, to a considerable extent, in the interest of welding our frayed ends securely to the American Medical Association.

About ten years ago we succeeded in inducing this office to send Dr. William Allen Pusey to us. At that time Dr. Pusey was president of the Association. The effect of his presence was wonderful. Our meeting was large and enthusiastic. We felt we really had made a contact with the central office of the American Medical Association.

DISCUSSION

DR. JOHN B. MORRISON, New Jersey: I think that there is a great deal of food for thought in this paper. The chief idea expressed was a plea for local, geographical groupings of the American Medical Association.

Six years ago a plan was formulated in New Jersey for a tristate conference consisting of delegates from the medical societies of Pennsylvania, New York and New Jersey. Some excellent work was done in this section of the country. This year that conference was expanded to include the central East and Northeastern states. The conference included representatives from twelve states, and the result of the deliberations were sent to the Trustees of the American Medical Association.

If the country were divided into groups, such as Dr. Harbridge has outlined, the local problems of a third of the United States or a quarter of the United States could be brought to the attention of the American Medical Association with far more force and far more directness than if they come from one state medical society.

DR. D. F. HARBRIDGE: Further, in support of the theory, as brought out this morning in several very virile papers, it was shown that the rank and

file of the membership is wholly unfamiliar with certain phases of Association work.

Of course, the criticism might be made, "Why don't they read it in the various Association publications?" Sometimes a doctor is a little slow in accepting or informing himself from these printed reports. Going directly to him with a personal spoken word will keep him properly enlightened. If these subjects, as discussed this morning, are to be put over as they should be, there must be closer contact than at present with the rank and file of the men of the organization. It seems to me the only way this may be attained is by spreading our efforts out by means of national sectional meetings.—A.M.A. Bull. 31:34, Feb., 1936.

TO THE COUNCIL AND HOUSE OF DELEGATES, ARIZONA STATE MEDICAL ASSOCIATION:

Gentlemen: I present herewith treasurer's report for the year ending April 15, 1936 (Books closed this date).

GENERAL STATEMENT

Total Receipts All Sources:

Balance General Fund,		
April 10, 1935	\$	3,019.85
Dues 1935-36, 302 members		
@ \$12.50	\$	3,775.00
Less bank charges		
on P.O. money		
order26	3,774.74

Defense Fund: Balance in		
Savings Bank, April 11, 1935	3,609.76	
Coupons and Interest	734.99	
Gain on exchange bonds	90.63	
United States Bonds	20,000.00	\$31,229.97

Total Disbursements All Sources:

From General Fund	2,147.53	
From Savings Account	2,051.21	4,198.74

Total Balance All Sources, April 15, 1936, \$27,031.23

ANALYSIS AND STATEMENT BY FUNDS

1. GENERAL FUND

Receipts:

Balance in Bank of Arizona,		
April 10, 1935	\$	3,019.85
Dues 302 Mem. @		
\$6.50 Gen. Fund	\$1,963.00	
Less Bank chgs. on		
P.O. money order26	1,962.74
Dues 302 members @ \$6.00,		
Defense Fund	1,812.00	
Gain on exchange of		
United States Bonds	90.63	\$ 6,885.22

Disbursements, Duly Authorized, Paid from General Fund:

Sloan, McKesson & Scott,		
Medical Defense	\$	5.00
A. C. Taylor Printing Co.,		
Programs	42.86	
D. F. Harbridge, Secretary's		
office expense	60.00	
C. E. Yount, Treasurer's		
office expense	50.00	
O. H. Brown, S.W. Med.		
271 members @ \$2.00	542.00	
Mrs. K. I. Coleman, Steno.,		
Annual Meeting	100.00	
O. H. Brown, Medical		
Economics Committee	16.57	
Bower & Co., book sheets	1.07	
Martindell, Horne & Co.	30.00	

Sloan, McKesson & Scott,		
Medical Defense	5.75	
J. D. Hamer, A.M.A.		
Delegate	200.00	
Mountain States Telephone		
& Telegraph Co.	2.40	
Sloan, McKesson & Scott,		
Medical Defense	15.35	
Sloan, McKesson & Scott,		
Medical Defense	15.90	
Bank of Arizona,		
Safety Deposit Box	3.30	
Bank of Arizona,		
Shipping charges on bonds	3.08	
St. Louis Button Co.		
emblems	5.60	
Mrs. K. I. Colman, typing.....	4.47	
A. C. Taylor Printing Co.		
cards for souvenirs	2.53	
Vaughn's Indian Store, souve-		
nirs British Medical Assoc.	78.90	
W. W. Watkins, Stamps		
Indust. Relations Com.....	3.00	
A. C. Taylor Printing Co.		
stationery	8.49	
Sloan, McKesson & Scott,		
Annual Retainer	100.00	
Tock Studio, Medical Defense	7.32	
D. F. Harbridge, Medical		
Defense	4.08	
D. F. Harbridge, Secretary's		
office expense	60.00	
Sloan, McKesson & Scott,		
Medical Defense	700.00	
A. C. Taylor Printing Co.,		
cards, etc.	8.89	
Peterson, Brooke & Steiner,		
stationery	4.85	
Bower & Co., stationery.....	2.30	
St. Louis Button Co.,		
Badges	36.01	
Republic and Gazette		
Engraving Co.	27.81	
April 15, 1936, Transfer to De-		
fense Fund Sav. Acct.	1,042.85	3,190.38

Balance in General Fund, April 15, 1936, \$3,694.84
Check outstand., Defense Fund Sav. Acct. 1,042.85

Bal. in Bank of Arizona, April 15, 1936, \$4,737.69

2. DEFENSE FUND

Receipts:

Bal. in Yavapai County		
Sav. Bank., April 11, 1935	\$	3,609.76
Interest on Deposits,		
June, 30, 1935.....	36.35	
December 31, 1935	36.94	
Coupons, U. S. Bonds	661.70	
302 members @ \$6.00		
Medical Defense	1,812.00	
Gain on exchange of bonds	90.63	\$ 6,247.38

Disbursements:

Sloan, McKesson & Scott,		
J. M. Pearson	\$	5.00
Sloan, McKesson & Scott,		
T. C. Harper	5.75	
Sloan, McKesson & Scott,		
T. C. Harper	15.35	
Sloan, McKesson & Scott,		
T. C. Harper	15.90	
Sloan, McKesson & Scott,		
Annual Retainer	100.00	
Sloan, McKesson & Scott,		
D. M. Davis	700.00	

Tock Studio, D. M. Davis	7.32	
D. F. Harbridge, Telephone D. M. Davis	4.08	
Bank of Arizona, cost of shipping bonds	3.08	
Bank of Arizona, Safety Deposit Box	3.30	
	\$ 859.78	
Purchase United States Bonds	2,051.21	\$ 2,910.99
Bal. Yavapai Co. Sav. B'k, Apr. 15, 1936,		\$ 3,336.39
Explanation of Transfer of Funds:		
302 members @ \$6.00 for Medical Defense	\$ 1,812.00	
Gain on exchange of bonds	90.63	\$ 1,902.63
Medical Defense expense paid from General Fund		859.78
Transferred from General Fund to Defense F'd, Apr. 15, 1936		\$ 1,042.85

EARNINGS OF DEFENSE FUND AND BONDS SINCE LAST REPORT:

Bonds, Coupons	\$ 661.70	
Sav. Accts, Interest	73.29	
Gain on ex. of called bonds	90.63	\$ 825.62

UNPAID EXPENSE FOR 1936:

Secretary's office expense \$	120.00	
Treasurer's office expense	50.00	
Seneographer An. Meet....	100.00	
Annual Retainer, Sloan, McKesson & Scott	100.00	
Southwestern Medicine 302 members @ \$2.00	604.00	\$ 974.00

RECOMMENDATIONS:

1. Our paid up membership for the fiscal year is 302 as compared with 276 members for the last fiscal year, representing a gain in dues of 26

members. Your Treasurer recommends that the dues be continued and prorated the same as last year, namely \$12.50.

2. Our balance in the General Fund, after having paid the bills incurred during the year and after paying those budgeted, will be approximately \$2,500.00. Your Treasurer recommends that One Thousand Dollars (\$1,000.00) of this amount be transferred to the Medical Defense Fund.

3. The balance in the Medical Defense Fund Savings account is \$3,336.39. If recommendation No. 2 is approved, your Treasurer recommends that we purchase Two Thousand Dollars (\$2,000.00) of United States Bonds, the best obtainable.

LIST OF BONDS OWNED BY THE ASSOCIATION

Treasury 27/8%	Treasury 3 1/4%	Treasury 4%
1955-60,	1944-46	1944-54
Pur. Mar. 1936	1000-68991-A	1000- C-00080373
1000-336027-H	1000-68992-B	1000- D-00080374
1000-336028-J	1000-68851-A	1000- E-00080375
		1000- F-00080376
		1000- G-00080377

\$10,000 of United States First Liberty Loan, converted, 4 1/4% bonds were called during the year and the following were obtained in their place:

Treasury 27/8%, 1955-60		
100-206416-F	500-88490-L	1000- 188524-D
100-206417-H	500-88491-A	1000- 188525-E
100-206418-J	500-88492-B	1000- 188526-F
100-206419-K	500-88493-C	1000- 188527-H
100-206420-L	500-88494-D	1000- 188528-J
	500-88495-E	1000- 188529-K
	500-88496-F	

Respectfully submitted,

C. E. YOUNT, Treasurer.

We, the undersigned, a committee appointed by President Swetnam, have audited the books of the Treasurer and inspected the bonds in his custody, and find them to be correct.

R. N. LOONEY,
JAMES H. ALLEN

C. W. Gerber,
Pres., Las Cruces

NEW MEXICO SOCIETY DEPT.

L. B. Cohenour,
Sec., Albuquerque

PUBLIC HEALTH NOTES

J. Rosslyn Earp, Dr. P. H.
Director, New Mexico State Bureau of
Public Health.

Every serious study of scarlet fever in the last two to three years has added to our growing uncertainty as to the effectiveness of our present methods of controlling its spread. Hence, "what is scarlet fever?" must be answered before we can begin to put its control upon a scientific foundation. Many private practitioners still refuse to diagnose scarlet fever without a rash.

In 1934 the Detroit epidemiologists showed¹ that upper respiratory infections including tonsillitis are relatively prevalent among persons recently exposed to scarlet fever and that many of these infections cause immunity to scarlet fever as judged by the Dick test.

Hobson² builds a characteristic epidemic curve

for a school outbreak by including 34 cases with classical erythema, six with no rash, 48 with temperature cough, and sore throat; and 77 with temperature only. Out of 179 cases which he believes to have suffered from an identical infection, only 48 would have been reported as scarlet fever! No matter how effectively those 48 were quarantined the epidemic could not have been arrested.

Then there is the carrier. In the Detroit investigation 31.6 per cent of the secondary cases were assigned to infection from undiagnosed cases, and 50 per cent from carriers. It is admitted that no line can be accurately drawn between these two groups.

Carriers are two kinds: (a) Those who have picked up the organisms by contact with a case, and (b) convalescents. There is evidence that the former are the more important. Brown and Allison³ found hemolytic streptococci in the noses or throats of 82.8 per cent of discharged patients;

after studying cases which resulted from contact with these and with the discharged patients who were "negative" he concluded that bacteriological examination of swabs from discharged patients' throats has no practical value. Bacteriologists must learn to tell whether a particular strain of hemolytic streptococcus is or is not likely to cause scarlet fever.

Two practical measures should not be neglected:

(1) Wherever scarlet fever is every case of fever with sore throat or of unexplained fever even without sore throat should be reported to the health officer he must use his judgment about isolation and quarantine. (2) I believe active immunization is now practical. Various articles now indicate that serious reactions from scarlet fever toxin may be practically eliminated. The Milwaukee health department began an immunization campaign in the public and parochial schools two years ago⁴. In 1934 and 1935 five injections of toxin were given 6,364 children; 3,744 had less than five doses. The case rate per 1,000 for inoculated children is 2.5 and for the unimmunized 60. Even the children who had received only the first two doses "seemed to have been fairly well protected." Private practitioners may decide to give 10 injections leading to the final dose of 80,000 skin test units or to time their injections so that the expected reaction will arrive while the child is asleep. They may select their cases. Many will feel that the time has come when children should be immunized against scarlet fever.

REFERENCES

- (1) Gordon, J. E., Badger, G. F., Darling, G. B., and Schooten, S. S.: Reactions of Familial Contacts to Scarlet Fever Infection, *Am. J. our Publ. Health*, 25:531, 1935.
- (2) Hobson, F. G.: What is Scarlet Fever for the Clinician? *Lancet* 1:417, 1936.
- (3) Brown, W. A. and Allison, V. D.: Carriers and Return Cases in Scarlet Fever, *J. our Hygiene* 35:283, 1935.
- (4) Koehler, J. P.: Scarlet Fever Control, *Ill. Health Mess.* 8:23, 1936.

The Grant County Medical Society met at Silver City for dinner, April 24, 1936, at 7:00 P.M. with the following members present: Drs., Borglum, Fahy, Frazin, Jones, Johnson, Kramer, Lane, Mann, Martin, McCreary, Washburn, and Watts, and two guests, Dr. Dodge, Commanding Officer of the Veterans Bureau Hospital at Ft. Bayard, and Mr. Bolton, Sanitary Inspector for this District of New Mexico.

After dinner the society was called to order by the President, Dr. R. C. Lane. Dr. McCreary of the program committee announced that he had communications concerning available motion picture films, and would endeavor to get one for the next meeting. It was decided to hold the May meeting on Friday, May 22nd, instead of the last Friday of the month. There being no further business the clinical program was presented.

Dr. Marcellus McCreary of Ft. Bayard, read an excellent paper on appendicitis, in which he presented in detail a survey of 530 cases of appendicitis which came to operation at the Veterans Hospital since June, 1932. In this series there were nine deaths with the causes as follows: Two

uremic poisoning, two pneumonia, one scarlet fever, one pulmonary embolism, and three spreading peritonitis. Spinal anesthesia was used almost exclusively with the following technic: One hour prior to operation morphine grain one-quarter and atropin grain 1/150 were given; then on the table just prior to spinal injection three-quarters of a grain of ephedrin was given. With patient on right side and large area on back thoroughly cleansed about two c.c. of spinal fluid are withdrawn and mixed with novocaine and re-injected with foot of table depressed about five degrees for about five minutes; then patient is turned on back and placed in about 15 degrees Trendelenburg position; attendant checks blood pressure, pulse rate, and respiration every few minutes. Adrenalin is used when blood pressure drops to any extent. There have been no serious reactions with this technic. McBurney incision usually was used. When needed, adequate drainage was established through stab wound in flank above crest of ilium. It was emphasized that early diagnosis and early operation is essential and imperative in the treatment of appendicitis.

Dr. McCreary's paper was generously discussed by all present, and closing remarks were made by the essayist. There being no further business the society adjourned.

BOOK REVIEWS

CLINICAL LABORATORY METHODS: By Pauline S. Dimmitt, Ph. G.; Medical Technologist for the Stout Clinic, Sherman, Texas; Former Instructor in Biological Chemistry, University of Texas School of Medicine; and Medical Technologist in the Pathological Laboratory, John Sealy Hospital, Galveston, Texas; Illustrated with 44 engravings; F. A. Davis Company, Publishers, Philadelphia, Pa.; 1936.

Mrs. Dimmitt is a graduate pharmacist and widow of a physician. She has endeavored to present the enlarged scope and changed technic of laboratory procedures in a volume readily utilizable by the technician. Theoretical considerations are not presented.

There are 28 chapters, the subject matter of them being as follows: Urine, blood, sputum, gastric and duodenal contents, liver function, feces, transudates and exudates, cerebrospinal fluid, bacteriological methods, vaccines, milk, agglutination tests, blood typing, Wassermann and other similar reactions, flocculation test, blood chemistry, hormone test for pregnancy, standard solutions, urea clearance test, typing of pneumococci, diagnosis of mononucleosis, testing for tuberculosis, CO₂ combining power of the blood, blood proteins, bromsulphthalein test for liver function, trichomonas vaginalis, amebiasis, and Kahn precipitation test.

It can readily be seen from a reading of this list of subjects that an effort has been made to make the volume highly practical. The work of the publisher is commendable the cuts being particularly excellent.

CLINICAL HEART DISEASE: By Samuel A. Levine, M. D., F. A. C. P., Assistant Prof. of Medicine, Harvard Medical School; Senior Associate in Medicine, Peter Bent Brigham Hospital, Boston; Con-

sultant Cardiologist, Newton Hospital; Physician, New England Baptist Hospital, Boston; 445 pages with 97 illustrations; Philadelphia and London: W. B. Saunders Company; 1936; Cloth, \$5.50 net.

This book is written specifically for the general practitioner. No effort is made to make it ultra scientific; references to the literature are not given. There are 445 pages with what appears to be a most excellent index. The subject matter is divided into 20 chapters, the titles of which are about what the reader might expect.

Chapter 12 is devoted to functional heart diseases. It stresses particularly of being on the watch for hyperthyroidism in functional disturbances such as auricular fibrillations. He discusses cardiac fatigue and the various symptoms which go

with it. He particularly emphasizes the importance of discussing cardiac strains with the patients. It is important, he says, not to make the patient a cardiac cripple nor is it right for him to leave the physician's office feeling there is nothing wrong with his heart when his heart is already being overtaxed.

He has gone extensively into electrocardiography devoting 115 pages to explaining it in its various aspects. It seems that this is a particularly excellent chapter for the individual who has not had much training in the subject. He says that an able clinician who knows nothing about the string galvanometer can do better work than an expert in electrocardiography who has limited bedside experience and inadequate clinical judgment

Stephen Schuster,
President

EL PASO COUNTY SOCIETY DEPT.

L. O. Dutton,
Secretary

STAFF MEETING AT HOTEL DIEU February 19, 1936

CANCER OF STOMACH (CASE REPORT AND DISCUSSION)

DR. E. P. HARRIS: An American prospector, 57, entered hospital June 27, 1935 with abdominal pain and weakness. Eight months before he had been nauseated with severe pain in upper epigastrium. He gradually lost from 170 to 128 pounds. He described the pain as knife-like, either shooting through the abdomen or radiating to a shoulder. He had used about a half pint of whiskey and smoked about a package of cigarettes daily for years.

Examination showed an emaciated white man, tongue coated, chest emphysematous, teeth missing, heart dilated 12 cm. to left of midline, suggestion of mass in upper epigastrium, and several scars on penis. The red blood cells numbered 3,000,000; hemoglobin was 22 per cent—slight poikilocytosis, moderate macrocytosis and a marked achromia. Stomach and stool examinations showed occult blood and also urobilin in stool. Blood transfusions were given; he continued to vomit occasionally, failed steadily and died July 15.

The positive autopsy findings were: Stomach adherent to left lobe of liver; surface of liver was thickened and hardened; a large indurated area surrounding the esophageal opening to the stomach—edges raised and reddened. On liver surface was small hematoma, and within a hemorrhagic nodule about size of a large walnut. Lower lobes of lungs were pinkish and wet; lower left contained numerous pale grayish areas.

The clinical diagnosis was cancer of the stomach or duodenum. Anatomical diagnosis was cancer of the stomach, marked emaciation, pulmonary edema, bronchopneumonia, and hypertrophied prostate.

DR. GORMAN: This case is brought to our attention to again stress the frequency of gastric carcinoma and to summarize a few of the features associated therewith.

Cramer estimates that of the deaths due to carcinoma 42.8 per cent are in the stomach. The average age of a large series of cases at appearance of symptoms is about 53 years. In the Mayo series 10 per cent of stomach cancer was in patients below the age of 40. The youngest case under my supervision was 37, and the oldest 78. The average duration of symptoms before consulting a doctor has been shown to be about 11 months. It is difficult to formulate rules that might lead to our see-

ing these at a time when surgical procedure might prolong life. The greater prevalence of gastric carcinoma over former years is attributed to the increased span of life and to better diagnosis. The outstanding features in this man's history were the duration of epigastric pain of eight months, nausea, loss of weight, poor appetite, negative family history, comparatively poor living conditions, marked emaciation, no definite abdominal findings on examination, extreme anemia, gastric secretory response within reasonable limits, relief of symptoms at the onset from alkalis but later requiring opiates for pain, constant blood in the stools, constant eructation and occasional vomiting.

This is a characteristic summary of events. The onset of the condition frequently manifested in these cases is pain, which may simulate the hunger pain of ulcer and may be relieved by food.

The syndrome of benign ulcer in any patient over 40 should be regarded seriously and properly investigated. A past history of gastric discomfort with regularity of symptoms then disappearance of this regularity should suggest malignancy if in man over 40 until proved otherwise. Heaviness, indefinite, vague symptoms and unexplained nausea should suggest malignancy. If the patient gives a history of syphilis this must be considered in differential diagnosis; but the leucic lesion or x-ray is usually out of proportion to the well being of the patient. This patient apparently had poor social conditions. The percentage of cancer seems to be higher in the upper strata of society. Marked emaciation is not always present, and with as much weight loss as this patient had we are pessimistic as to favorable results. In the earlier cases in which we expect improvement or cure from surgery, loss of weight and anemia may be negligible. The gastric analysis is one which might be found in almost any type of case especially gastritis, nervous indigestion or even gastric ulcer. Secretory examinations except as an aid in summarizing the complete picture is of little avail. The figures may be in the normally accepted limits and the secretory response may be normal even in presence of an inoperable carcinoma. Stimulation by histamine may at times be a valuable aid in questionable cases. Blood constancy in the stools is of great significance and is an almost constant finding. It is a valuable aid in differential diagnosis between benign ulcer and malignancy.

Physical examination usually is of no help since the lesion is too high to be readily palpable. Unfortunately the same difficulty may be experienced on x-ray examination.

In the treatment of this type of case HCl may give relief but frequently it aggravates. Varying relief is obtained from alkalis; sedatives and narcotics frequently relieve pain.

Iron, liver, and ventriculin may make inoperable patients more comfortable. The diet most frequently used is liquids, soft foods, and gruels—the heavier foods either causing marked discomfort or vomiting.

The pathologist is inclined to classify cancer of the stomach in three types: No demonstrable ulcer present; carcinoma superimposed on polyp; carcinoma superimposed upon ulcer.

I emphasize the importance of: (1) Vague gastric discomfort in a patient over 40; (2) a changing train of symptoms in a patient with stomach trouble; (3) the symptoms previously present only at occasional intervals later developing constancy; (4) unexplained loss of weight, loss of appetite and anemia; (5) family history of malignancy; (6) prompt x-ray studies in cases which fail to respond to ordinary treatment; (7) daily examinations for blood in stools following meat-free diet in cases in which there may be doubt as to the differentiation of ulcer and cancer; (8) an ulcer defect larger than three-fourths of an inch is suspicious of malignancy although malignancy may have smaller defects than this; (9) having x-ray re-checks on gastric ulcer regardless of improved symptoms; (10) proper evaluation of gastric secretory findings remembering that they may give erroneous conclusions if not taken in connection with the picture as a whole.

Gastroscopic examination usually fails to give information as valuable as that obtained by use of the x-ray; however, in cases of this character where the lesion is difficult to demonstrate by x-ray, gastroscopic examination is most valuable.

However, it is an examination that should be used only by those familiar with the technique.

Gondolfo in reporting 1100 cases in which Roffo's cancer reaction was used concluded that a negative Roffo's reaction does not definitely exclude cancer, but that in a positive reaction the search for a neoplasm should be continued because the proportion of erroneous positive results is slight.

The most satisfactory information can be obtained by an exclusive history and the proper evaluation of symptoms in their relation one to another, and by x-ray examination.

DR. WAITE: We aren't yet very far away from Dr. Osler's "Watch the gastric quartette: Loss of appetite, loss of weight, loss of strength, and anemia." If you get these four things you are quite sure to have a carcinoma of the stomach.

A man came into my office, ill a considerable time, living on liquids, supposed to have cancer of the stomach. He had a suggestive history; everything was clinically perfect. After he died someone sent his stomach to me; there was no cancer. He may have had carcinoma of the esophagus, or farther down the intestinal tract, though either is uncommon.

By careful x-ray examination filling defects may be found and for this I think it is best to have the patient take two or three swallows of barium—just barely filling the stomach, so that by palpating it the outline of the rugae may be seen. In heavy-walled individuals it may not be possible to see the rugae. This examination should be in the standing position, because with the patient horizontal the stomach goes too far up under the ribs to be palpated and for the rugae to be seen.

The rugae usually are regular the whole length of the stomach; cancer of any consequence will



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produce a change whether on anterior or posterior wall. With the stomach completely filled only the outline of the lesser and greater curvatures and the bulb of the duodenum are seen.

Filling defects are due to spasm, and may be difficult to tell from those due to growth or ulcer. Atropine and belladonna do not always cause spasm to disappear; so we may still be in doubt after giving considerable atropine.

A growth of the pylorus (60 per cent of them are these) of any great size usually causes thickening of the gastric mucosa and thickening of the wall (also in chronic ulcer) causing more or less obstruction. A rigid pylorus may spread or gap and let barium empty rapidly. It may not be possible to tell about carcinoma in such a case. A definite obstruction for six hours means serious trouble at the pylorus; the age of the patient, the duration of the condition, and the symptoms help to make the diagnosis. We had a patient with obstruction of the pylorus. There were no other filling defects. He had a dilated stomach, loss of weight, and severe suffering from the obstruction, and a positive Wassermann; treated with sodium iodide he was soon able to eat. He gained weight and left the hospital in good condition.

It is not always possible to separate syphilitic obstruction from carcinoma without a blood test; and syphilis and carcinoma may co-exist.

In the cardiac end of the stomach it is difficult to make out filling defects. A tilting table to change the patient's position to see if the outline of the stomach changes is a good thing, but it is not always possible even then to make a diagnosis. Filling defects of any kind in a patient of cancer age ought to be taken seriously unless proven otherwise.

Tumors may be on the outside of the stomach, not of the stomach itself; they may make indentations into the stomach wall. To tell whether the growth is in the stomach or outside pressing the wall in may be difficult; but such tumors are not common. Tumors of the head of the pancreas probably cause more gastric disturbance than any other kind of tumor; jaundice usually exists in these cases. I think we have had more carcinomas of the head of the pancreas here since I have been in the hospital than carcinomas of the stomach. For some reason carcinomas of the stomach are not as common in this section of the country as in other sections.

To summarize: The common findings in x-ray are filling defect and obstruction.

DR. SCOTT: I am particularly glad to hear the discussion on cancer. It is a most neglected, misunderstood, and frequently mistreated disease. When recognized early it is amenable to treatment. It is chiefly a surgical disease.

Diagnosis is usually not difficult; but most unfortunately we are still under the influence of the teaching of a half century ago. Within six weeks it will be a half century since I had my first experience with cancer. The symptoms of cancer which have been taught are of the late disease.

Diagnosis of cancer of the gastro-intestinal tract is most difficult in the early stages. One cannot see what he is dealing with; and with x-rays one is dependent upon shadows; pain and other symptoms may be absent.

To illustrate: A lady vomited and had pain in her stomach. A mass was felt in the epigastrium. An exploration revealed a cancer as large as one's fist; she had had no trouble until three weeks before.

The symptoms that usually first call attention to cancer are hemorrhage and loss of weight. Very often the hemorrhaging has been for months and

unless severe is not noticed. Patients commonly pay no attention to their stools. One may have noticed even foul or black stools.

It is excusable not to suspect cancer in a patient under 40. Loss of weight, faintness and occasional nausea without anything to explain it suggests cancer, and we are inclined to think little of these; but a study of this kind emphasizes that we ought to be more alert in our daily work whenever symptoms arise that point to cancer.

Cancer located in the stomach, especially the lower half of the stomach, or anywhere along the alimentary canal, ought to be considered a curable disease unless there is evidence of metastasis. Differentiating between cancer and ulcer is not easy. A tumor may or may not move with excursions of the diaphragm. Examine the patient on his back, hips elevated, hands gently on the abdomen without causing definite resistance, and have him breathe full and free a number of times; if the tumor is attached to the liver, diaphragm, or pancreas it does not go up and down freely; if it moves up and down freely—hence not a fixed tumor—there is a chance of getting it out even though as large as a fist. Stomach tumors attached to other structures are beyond operation.

I recall a man, 70 years of age, who had a large tumor of the stomach. He had had a little hemorrhage; he had good resistance. We operated under local anesthesia and found a carcinoma of the stomach, and a few glands in the pyloric end of the stomach, but no metastasis; we did a resection and anastomosis removing all of the disease. The old gentleman lived four to five years.

An old lady had an operation in 1915; four-fifths of the stomach was removed. She illustrates that if the disease is limited to the stomach and the stomach wall, it is amenable to operation. It

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is foolhardy to operate on a carcinoma of the stomach where there is jaundice—because the liver or the common duct is involved—or when the head of the pancreas is involved.

I wish to emphasize that we are not doing all that we can to instruct the people to have prompt examinations when anything is wrong; we reach the children, but we cannot get the parents in groups large enough to make material progress.

We have done more public education on cancer in Texas than has been done in most of the other states. Statistics of the Prudential Life Ins. Co. show there are 1000 deaths from cancer annually per million people in the United States. If we had that proportion of cancer deaths in Texas we would have 6000. We may not report all cases; statistics show that in 1935 we had less than 4000 cancer deaths. I do not know that that is due to the efforts that have been made to teach people about cancer. The people have been instructed that cancer is a curable disease, and that its curability depends on its being treated before the cancer cells have migrated (understood better than "metastized") from the organ in which they started to some other organ.

A woman noticed a little lump in the upper outer edge of one breast. She had a friend who had heard a doctor discuss the question of lumps in breasts, that they were sometimes cancerous, that they are successfully removed if recognized early. That woman was in the hospital the following day. The lump was a small one—no larger than my index fingertip—but very definite. There were no others to be felt. A diagnosis of cancer of the breast was made on two points—one, that she had this firm, definite, well isolated lump; and then in the dark room with a small spotlight a shadow was cast across the breast and two artificial dimples

were discovered very clearly magnified by the spotlight—like when driving at night small depressions in the pavement show up clearly. The breast was amputated and cancer was proven.

Another patient had read a memorandum in the local paper where a doctor addressing a Rotary club had made the remark that tumors in the breast were never to be considered trivial as some are cancerous. While in a moving picture show she felt a lump in her breast about the size of a pecan. She went to her doctor and inside of four days the breast was removed and found to be grade three cancer; there were no enlarged nodes in the axilla.

The people ought to know that cancer of the skin and mucosa can often be prevented. Lesions of the skin remaining for a considerable time and located where they are easily irritated may become cancer. Any sore that remains two to three months is potentially cancerous. People ought to be taught that broken teeth and badly fitting plates which irritate tongues or cheeks or lips favor development of cancer; by removing such sources of irritation cancers are often prevented. We know not the cause of cancer, but we do know the predisposing factors. And these things, if known by the public, will certainly prevent many cancers. So it seems to me that we in the medical profession should become more sensitive to our duty to teach these simple things. Instead of 4000 fatal cancer cases in Texas we can have less than 2000.

The most impressive illustration I know of in speaking to a lay audience about cancer is to compare it to fire, and to tell them you can cure it almost as easily as you can put out a fire when it is small enough. If a person smells smoke it is foolhardy to say "It doesn't amount to anything; it comes from downtown somewhere." The people who have sense will see that it is not in their own

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houses. If they lie in bed till it has burned through the floor and the ceiling and into the attic, then all the fire departments in the city cannot save the house.

Not long ago I found an epithelioma on the eye of a patient, less than one mm. in diameter. That was taken off with cautery, and the laboratory proved the diagnosis. This insignificant thing might have destroyed that man's sight, and it might have gotten into his brain and then nothing could have been done. The insignificance of early cancer is the thing to remember; cancer is never too small to warrant your attention, and never too small or too insignificant to warrant the attention of a sensible patient. Have your patients and your public understand that though cancer is insignificant in the beginning that then is the time to treat it, and that it is infinitely better to prevent or cure it early than to attempt any sort of measures later on.

I want to express my appreciation and my admiration of what you are doing here. It seems you have the politicians where they belong. I never knew there was a hospital in Texas that was run by medical men—the ones who do the work—and not by the politicians. And what is being done in El Paso can be done in Dallas, and in San Antonio, and in New York, if they will go at it in the right sort of way. When I go back I am going to tell them about this, and tell it wherever I go.

NEWS ITEMS

Efforts were made to get Dr. John Bacon of Miami to become a candidate for National Committeeman; the election was held at the Democratic convention in Tucson, May 2nd. Dr. Bacon was asked by the administration months ago to run, but he declined.

Governor B. B. Moeur has formally announced his candidacy for re-election, subject to the Democratic primary, Sept. 8. The chief executive asserted "circumstances and recent developments" had caused him to change his mind and seek a third term.

Drs. E. L. Hicks and Harley Yandell of Phoenix and Dr. Leslie Ward of Buckeye examined babies for the Republic-Gazette Best Baby Contest held in April.

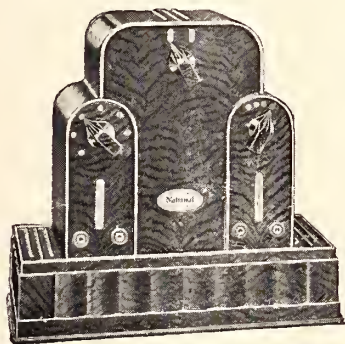
Dr. R. W. Hussong, Phoenix City Health Officer, addressed the annual session of the Arizona Public Health Association in Tucson. Dr. Hussong also had an article in the special "baby edition" of the Arizona Republic April 29, 1936, dealing with the importance of the early formation of good habits.

Dr. George C. Truman, state health officer, had an article in the special baby edition of the Arizona Republic for April 29 dealing with general care of the infant.

Dr. Norman A. Ross, county health physician of Maricopa County, had a short article in the special "baby edition" of the Arizona Republic, April 29 dealing with diets for children.

During the last week of April, the Phoenix Gazette and Orpheum Theatre put on a baby pageant and review. On the morning of April 29th the Republic issued a special "baby edition" in which there were a number of instructive articles concerning the care of children. This edition was apropos of National Child Health Day which was May 1st. So far as a hasty examination of this edition was able to reveal, there was nothing objectionable in it and its purpose seemed entirely

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laudible; even the advertisements seemed to be well selected.

Dr. George A. Hays, state epidemiologist for Arizona, stated that many of the physicians fail to report cases of tuberculosis. Because of this fact the statistics indicate a high death rate among the tuberculous in Arizona.

Dr. F. C. Jordan, Phoenix, Arizona, assisted in the round-up examination of pre-school children for Scottsdale. These examinations are held under the auspices of the Scottsdale Parent-Teacher Association.

Dr. Mayo Robb, Phoenix, eye, ear, nose, and throat specialist, assisted in the round-up of the pre-school children in Scottsdale during the last week in April.

Past President C. R. K. Swetnam of Prescott was called home from Nogales shortly after he had installed President-elect Hamer of the Arizona State Medical Association.

On the evening of December 5, the **Maricopa County Medical Auxiliary** entertained the doctors with a Japanese festival dinner—sukiyaki. The invited ones were obliged to cook their own dinner; a large number arrived at the home of Dr. Fred G. Holmes to be announced by the clamor of an old temple gong; within was an Oriental atmosphere, even to the faint odor of sandalwood. Low tables had been set with bowls and chopsticks in Japanese fashion, each presided over by a hostess in gay kimono.

The entertainment consisted in preparing and consuming sukiyaki. The raw material for the meal was upon the tables around which the guests sat on their heels. (That these genuflections soon became difficult indicates that Phoenix doctors are not accustomed to spending much time on their knees!) They attended to the electric grills which took the place of the charcoal brassieres of Japan. Each one's chopsticks had a part in assembling the concoction and while it bubbled in the pot they played Oriental games, sipped tea gustily and learned to crack watermelon seeds expertly. The real test of the adaptability of man came when each received his bowl of steaming rice and savory sukiyaki and went to work with his chopsticks. Suffice it to say that what was lacking in dexterity was made up in hilarity and no one went hungry. It proved a very merry meal.

Mrs. George Thorngate planned the sukiyaki and was assisted by Mrs. Holmes, Mrs. James Meason, Mrs. J. E. Drane, Mrs. Preston Brown, Mrs. C. Lawrence von Pohle, and Mrs. John Pennington.

Dr. Trevor G. Browne, Phoenix, Ariz., was appointed by the city commission to the city parks, playgrounds, and public recreation board to fill a vacancy caused by the expiration of the term of W. C. Eliot, Phoenix attorney. Dr. Browne's five-year term will date from April 1 of this year. He was elected president of the board.

Dr. Fred J. Holmes, of Phoenix, attended the meeting of the National Tuberculosis association held in New Orleans during April. Dr. Holmes is one of the directors of that association.

Dr. R. L. Stroud, of Tempe, was the guest speaker at a meeting of the Adams Parent-Teacher association of Phoenix, Ariz., April 8, 1936.

Dr. and Mrs. R. D. Kennedy of Globe were weekend visitors in Phoenix during April.

Dr. Daniel Gordon, Phoenix, Arizona, died April 21, 1936 in a local hospital. He was 40 years old and resided with his family at 901 East Roma Avenue. Dr. Gordon practiced in Chicago for 15 years and retiring because of ill health; he came to Phoenix two years ago. He was a World War veteran and a member of the John C. Greenway post, American Legion, here.

Surviving are his wife, Edith; a daughter, Reva; three sons, David, Devore, and Avrim, all of Phoenix; two brothers, Frank, Harlingen, Texas, and Phillippe, New York City; and his mother, also residing in New York.

The Medical Auxiliary with their husbands of the Maricopa County Medical Society had a picnic supper and steak fry Thursday evening, May 7th, on the desert at the home of Dr. and Mrs. Ralph F. Palmer.

Dr. W. O. Thoeny of Phoenix, and Dr. W. S. Sharp of Mesa gave their services to the Parent-Teachers' Association of the Gilbert district for the annual summer round-up examinations of the pre-school children.

Mrs. James M. Meason of Chandler, outgoing president of the Maricopa County Medical Auxiliary, was elected president of the State Medical Association Auxiliary at the annual convention in Nogales last month. Other officers are: Mrs. C. E. Patterson, Tucson, president-elect; Mrs. James Allen, Prescott, first vice-president and organizer; Mrs. Warner Watkins, Phoenix, second vice-president and program chairman; Mrs. C. Lawrence Von Pohle, Chandler, corresponding secretary; Mrs. O. W. Shoeny, Phoenix, recording secretary; Mrs. Geo.

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Evaporated milk formulas are indicated for newborns with limited digestive capacities. They may be used to advantage in considerably higher concentrations than whole milk for premature, feeble and debilitated infants.

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Boiled Water	12 ounces
Karo	2 tablespoons

Powdered Milk	5 tablespoons
Boiled Water	20 ounces
Karo	2 tablespoons

Lactic Acid Milk	12 ounces
Boiled Water	8 ounces
Karo	2 tablespoons

REFERENCES:

Kugelmass, Clinical Nutrition in Infancy and Childhood, Lippincott.
Marriott, Infant Nutrition, Mosby.
McLean & Fales, Scientific Feeding in Infancy, Lea & Febiger.

The amount of Karo required may be added directly to the total volume of acid milk prescribed. Karo is an excellent milk modifier of dextrins, maltose and dextrose (with a small percentage of sucrose added for flavor) for both the baby and the budget.

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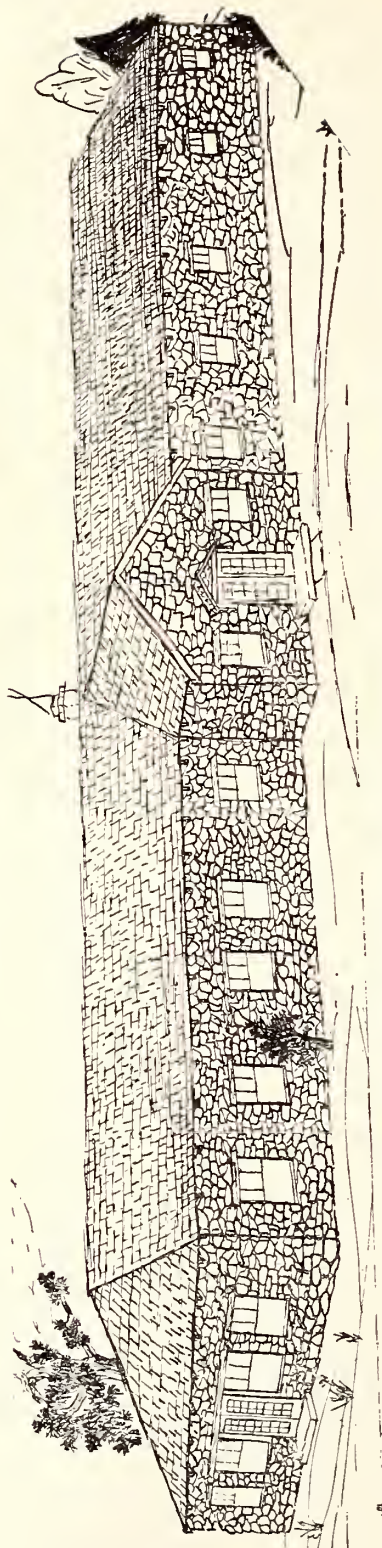


C. Truman, Phoenix, treasurer; Mrs. C. A. Thomas, Tucson, parliamentarian; Mrs. J. C. Wilson, Willcox, publicity for Southwestern Medical Journal; Mrs. C. R. Swackhamer, Superior, hygiene chairman; Mrs. J. D. Hamer, Phoenix, exhibit chairman; Mrs. Harlin P. Mills, legislative chairman; and Mrs. J. M. Greer, public relations chairman.

BOOK REVIEWS

INTERPRETATION OF LABORATORY FINDINGS: By Raymond H. Goodale, M.D.; Pathologist, City Hospital, Worcester, Mass., Visiting Pathologist, Belmont and Fairlawn Hospitals, Worcester, Mass., Harrington Memorial Hospital, Southbridge, Mass., and Baldwinville Hospital Cottages, Baldwinville, Mass.; Assistant Professor of Experimental Pathology, Boston University School of Medicine, Boston, Mass.; F. A. Davis Company, Philadelphia, Pa.; 1936.

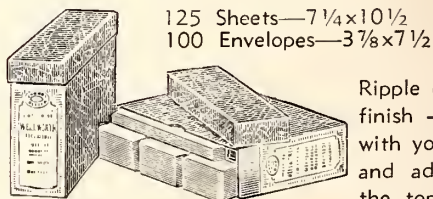
This book is written by one who has learned from frequent consultations with physicians—specialists as well as internes—that all practitioners at one time or another need compact useful information upon the interpretation of laboratory data. This the author has attempted to give in a compact form in this volume. The book contains 170 pages and is divided into four divisions. Part one has to do with normal values and interpretation of abnormal values in the tests of blood, urine, sputum, cerebrospinal fluid, feces, metabolic rates, liver function tests, etc. Part two deals with diseases and associated laboratory findings. All



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diseases in which there might be important laboratory findings are discussed. Part three deals with physiologic pathology of body fluids and excreta. Part four is preparation for laboratory procedures.

HOSPITAL SERVICE IN THE UNITED STATES: Fifteenth presentation of Hospital Statistics by the Council on Medical Education and Hospitals of the American Medical Association; Reprinted from the Hospital Number of the Journal of the American Medical Association, March 7, 1936; Price 50c.

This paper-bound booklet lists the hospitals of the United States as Federal, State, County, City, Church, Fraternal, and Proprietary giving the type of work done, the facilities, schools of nursing, etc.

The aim is to record the hospitals' fulfillment of their mission as institutions of healing. These reports have no doubt done much to raise the standards of hospitals.

THE CALIFORNIA MEDICAL ASSOCIATION CANCER COMMISSION COMMITTEE STUDIES: California Medical Association, San Francisco, California; J. W. Stacey, Inc., San Francisco, Calif.; Price 75c.

This paper bound volume of 130 pages contains a vast store of condensed information. While the commission is composed of about ten men, special reports are made by about 15 committees consisting of anywhere from five to 20 men each. The essential data showing the different types of cancer is presented in relatively few words. For example: Chest tumors is discussed in four pages and the committee is composed of 19 men. On that committee we find such names as F. M. Pottinger, Phillip King Brown, Frank S. Dolley, A. Lincoln Brown, and Robert A. Peers. One significant statement is "far too often pulmonary malignancy is not considered until too late in the patient's sickness. Pulmonary inflammation or tracheobronchial irritation unusually prolonged should lead to the consideration of bronchial or pulmonary malignancy. When a "pneumonia" is termed "unresolved," the possibility of underlying malignancy must be considered. It summarizes the symptomatology by irritating nonproductive cough, with or without blood-streaked sputum, an acute illness, gradual loss of weight, bloody effusion, etc.

This is a valuable little volume for any physician to have.

Social Security by Dr. Edward H. Ochsner; Social Security Press, 538 So. Wells St., Chicago, Ill.; 40c, postage prepaid in U. S.; cloth bound; 231 pages.

Dr. Ochsner makes a strong plea with irrefutable arguments against socialized medicine. He states that under the German system of practice of medicine since social security has gone into force that the number of sickness days lost by the German workmen has more than doubled and that the mortality rate in comparable areas in Germany and this country is greater in Germany. He shows also that the quality of medical services has deteriorated under compulsory health insurance, and that the cost of hospital and medical care are increasing year by year. He shows further that the social security legislation in the nations which have adopted it has led to laziness, shiftlessness, malingering, and shirking. He thinks that the legislative "cure-alls" like social security although they are costly are merely palliatives in effects and in the long run make conditions worse instead of better.

The book is easy to read, is not too long, and presents only sufficient statistics to corroborate the important statements made. It is recommended that all physicians read the book; it is relatively inexpensive.

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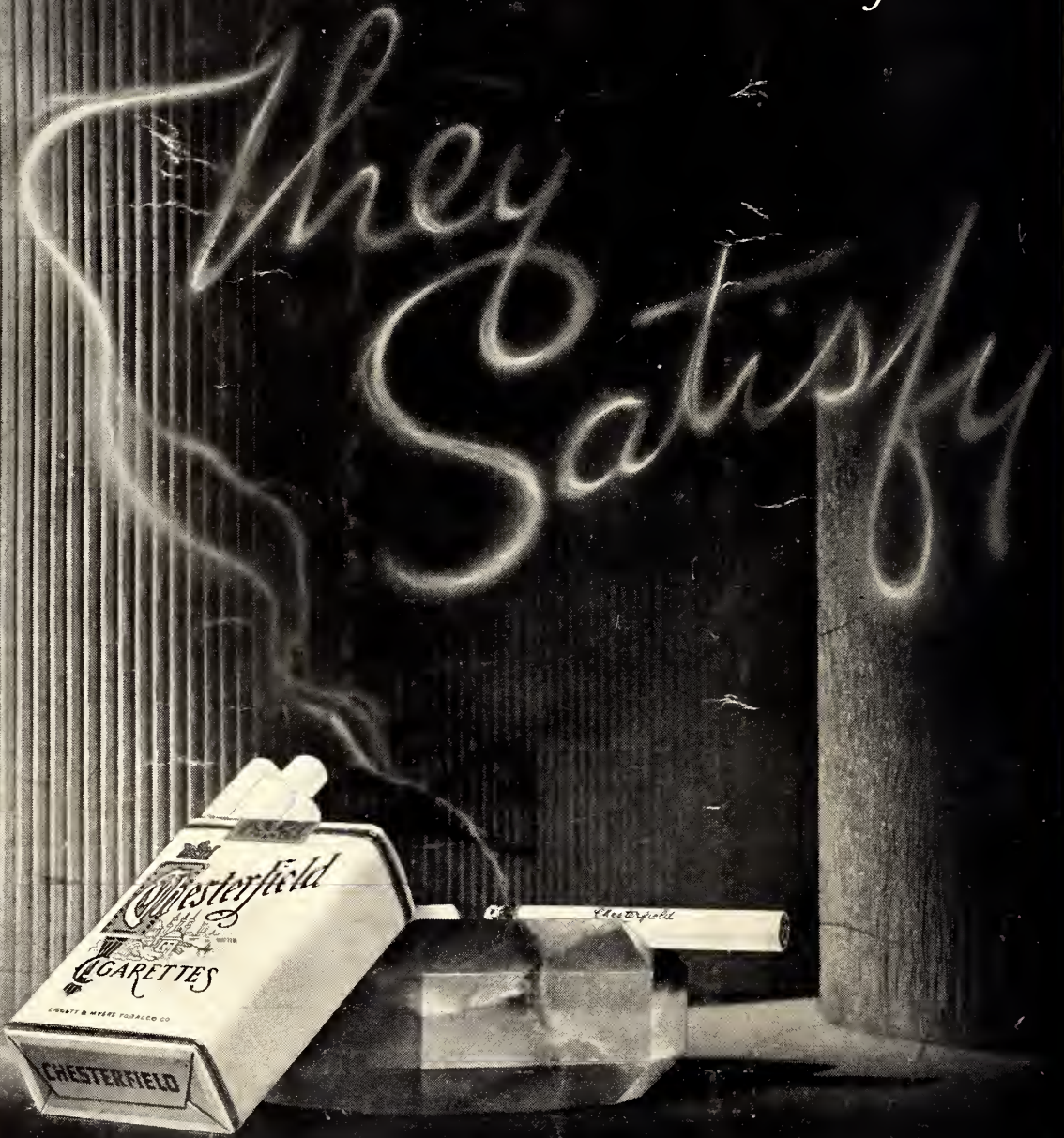
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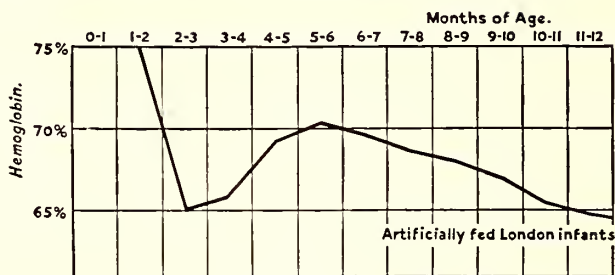
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V. FOOD IN THE OPEN CAN

• In September 1935, the facts about food in the open can were presented on this page. It was stated that there was no reason, from the standpoint of food poisoning, why food must be removed immediately after the can is opened. This statement bore the Seal of Acceptance of The Committee on Foods of the American Medical Association.

However, since that time, two incidents have occurred which lead us to present again the facts concerning food in the open can.

First, late last fall, a national organization dedicated to the relief of human distress during war and disaster, issued a list of precautions designed to reduce accidents in the home, in which it was erroneously recommended that food be removed from the can immediately. The Department of Agriculture detected this error and called it to the attention of those responsible for issuance of the recommendations. A correction was made as soon as possible but the damage had already been done. The original safety recommendations had meanwhile been issued in schools and newspapers throughout the country, thus giving further support to this old, unbased prejudice against canned foods.

Second, in the early months of 1936, a release regarding food in the open can was

made by a national press service to newspapers throughout the land. The strong inference was made in this press release that food left in the open can might become hazardous to consumer health.

This dissemination of misinformation, referred to in the two instances cited above, has caused an increase in the number of consumer inquiries concerning the safety of food in the open can. To reply to these requests for reliable information, we can well quote from a recent release made by the Department of Agriculture (1).

(1) U.S.D.A. Press Release, Feb. 23, 1936

"It is just as safe to keep canned food in the can it comes in—if the can is cool and covered—as it is to empty the food into another container. Thousands of housewives are firm in the faith that canned goods ought to be emptied as soon as the can is opened, or at least before the remainder of the food goes into the refrigerator—one of the persistent food fallacies. The question keeps coming to the Bureau of Home Economics in letters from home-makers.

"A few acid foods may dissolve a little iron from the can, but this is not harmful, not dangerous to health. Cans and foods are sterilized in the 'processing'. But the dish into which the food might be emptied is far from sterile. In other words, it is likely to have on it bacteria that cause food to spoil.

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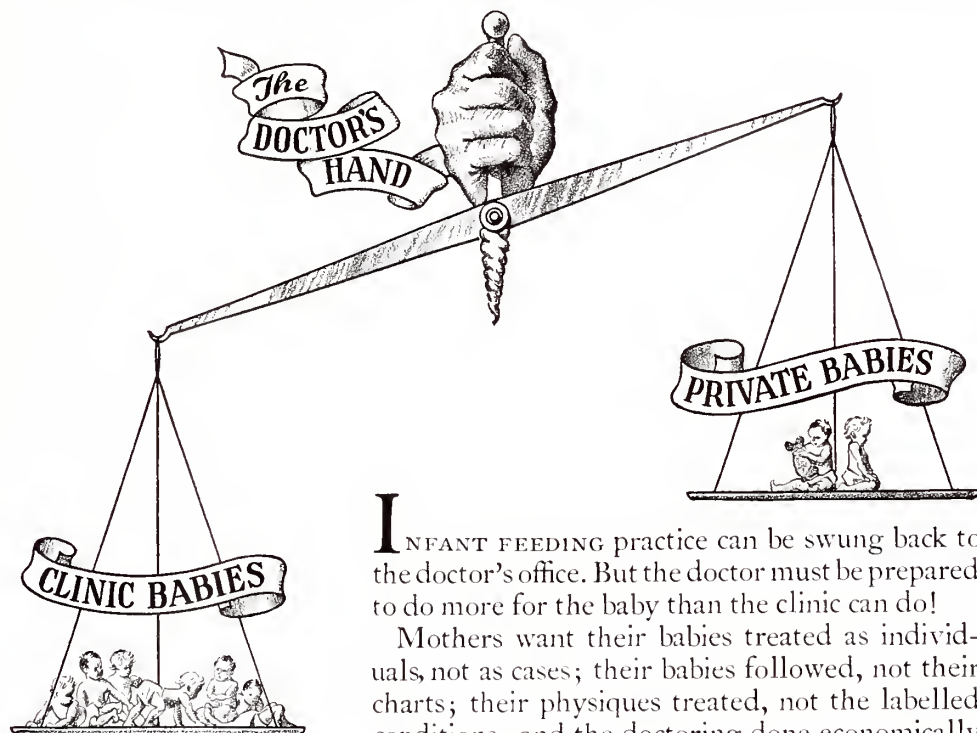
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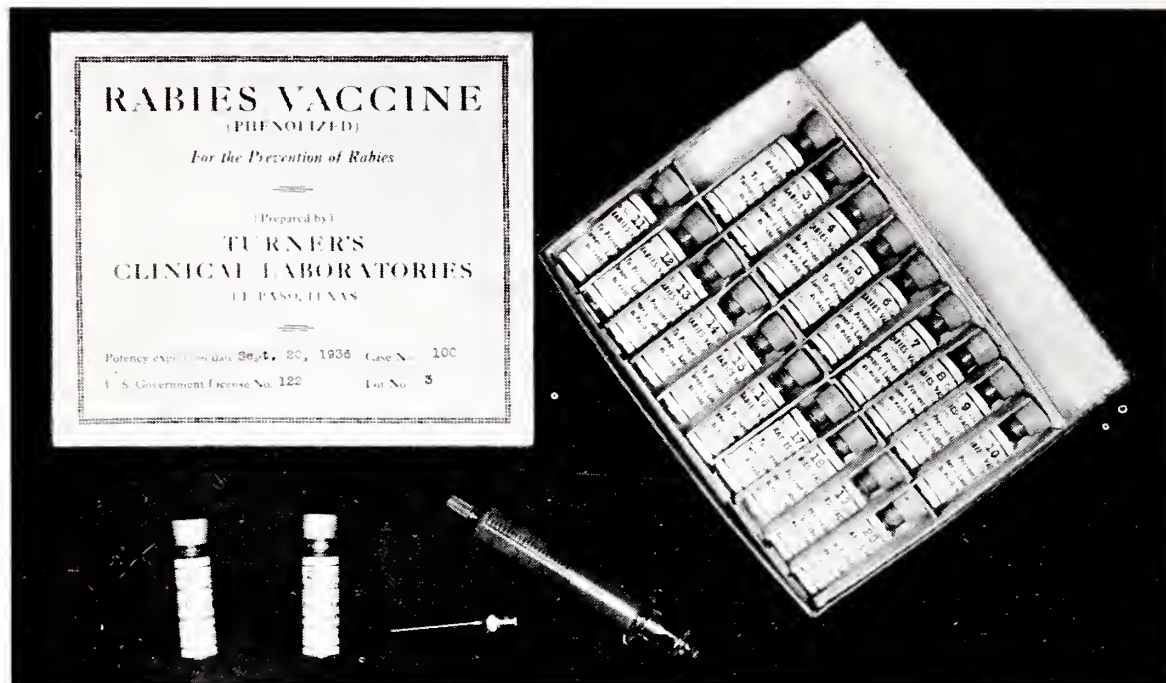


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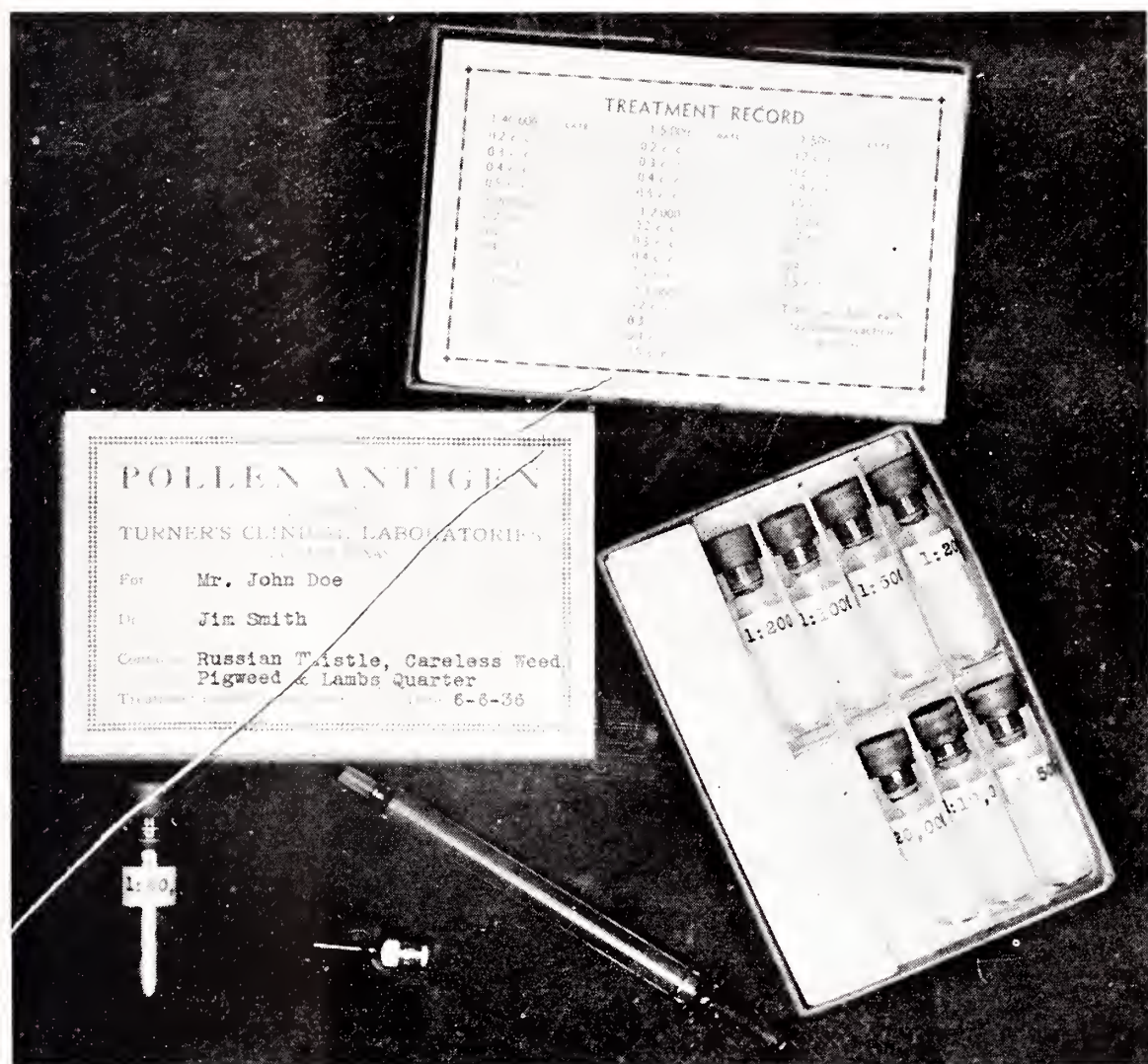
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VOL. XX.

JUNE, 1936

No. 6

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THE INGUINAL TRIGONE: INDUSTRIAL CONSIDERATIONS

R. F. PALMER, M. D.

Medical Advisor, Industrial Commission of
Arizona, Phoenix, Arizona.

(Presented to the 45th Annual Session of the Arizona State Medical Association, April 23-25, 1936).

The purpose of this paper is to suggest a different conception of industrial hernias and to propose means whereby, through the guidance of the medical profession, responsibility may be assumed by industry in all hernias occurring during employment—a responsibility sufficient to relieve the disability of the workman at a cost not prohibitive to industry.

Personally, I believe that: The medical care of injured workmen, which plays such an important part in the administration of workmen's compensation, should be considered a direct responsibility of the medical profession; organized medicine through state and county societies should so direct and supervise the practice of industrial surgery that the disability of the injured workman and its relief through adequate medical care may ever be the first thought in such practice; and that organized medicine should hold itself responsible to the employer for adequate medical treatment at a cost consistent with the services rendered and the ability of industry to pay.

Definition and boundaries: The inguinal trigone, or inguino-abdominal region, as described by Callander, is that subsidiary area of the anterior abdominal wall on either side, bounded below by the inguinal ligament, above by a horizontal line extended from the anterior superior spine of the ileum to the lateral margin of the rectus muscle, and mesially by the lateral margin of this muscle.

As the surgical importance of this region is derived from the high incidence of inguinal hernia, so is its industrial importance of mo-

ment because of the great number of inguinal hernias developing in workmen during employment, and further, because of the responsibility which industry must assume for the disabilities resulting therefrom, more especially in the light of the principles of workmen's compensation and the laws enacted for the government of those principles.

The workmen's compensation laws, enacted by the various states of the Union, contain one or more sections dealing specifically with hernias. In all of them, so far as I am informed, will be found definite restrictions excluding all hernias except those which are described as real traumatic hernias.

The Arizona Law, section 1439, reads as follows:

"All hernias are considered to be injuries within the provisions hereof causing incapacitating conditions or permanent disability, and until otherwise ordered by the Commission, the following rules for rating the same shall govern: (a) Real traumatic hernia is an injury to the abdominal wall of sufficient severity to puncture or tear asunder the wall, and permit the exposure or protruding of the abdominal viscera or some part thereof. Such injury will be compensated as a temporary total disability, and as a partial permanent disability, depending upon the lessening of the injured individual's earning capacity; (b) all other hernias, whenever occurring or discovered and whatsoever the cause, except as under (a), are considered to be diseases causing incapacitating conditions, or permanent partial disability; but the permanent, partial disability and the causes of such are considered to be as shown by medical facts to have either existed from birth, to have been years in formation, or both, and are not compensatory, except it be proven: That the immediate cause, which calls attention to the presence of the hernia, was a sudden effort or severe strain or blow received while in the course of employment; that the descent of the hernia occurred immediately following the cause; that the cause was accompanied, or immediately followed, by severe pain in the hernial region, and that the above facts were of such severity that the same were noticed by the claimant and communicated immediately to one or more persons, in which event they are considered to be aggravations of previous ailments or diseases, and will be compensated as such for time lost only to a limited extent, depending upon the nature of the proof submitted and the result of the local medical examination, but not to exceed two months."

Under a strict interpretation of this law and the rules now governing its administration, a traumatic hernia is seldom encountered and then most probably only in association with other serious injury. Likewise, a compensable hernia, if fully meeting the requirements laid down for it, is unusual. All other hernias, and they comprise more than 95 per cent of those reported to the industrial commission of this state, are entirely unprovided for.

Hernia decisions by the commission: When a hernia occurs in a workman, he, either then or sometime later, files claim for compensation. The industrial commission, in order to act on the claim and determine the industrial responsibility must, in addition to the workman's statements, have the employer's report of the accident and the initial medical report of the physician who examined the patient. If these two reports and the workman's statements do not agree as to details of the accident and subsequent events, and they frequently do not, an investigator is put on the case to acquire the possible facts. An examination by a second surgeon or the medical advisor frequently is requested, and, as a rule, considerable time and expense are involved before sufficient facts are available to warrant a decision. Should responsibility of the insurance carrier be denied by the commission, the claimant, who firmly believes the hernia was caused by the strain, demands a formal hearing, and he starts looking for doctors, lawyers and political friends seeking assistance in securing the consideration to which he feels himself rightfully entitled. Consequently, further waste of time and money is incurred before thought can be given to the physical ailment of the man and the means by which his disability may be relieved. It might appear that if the doctors who first see the hernia cases would make thorough investigations and reports and carefully explain to the patients just what a hernia is and why the commission cannot accept responsibility, or place it upon the insurance carrier involved, or order operation and compensation, many of the difficulties surrounding these cases might be solved. This, however, is too much to expect even from a member of the medical profession, at least, under the present industrial set-up. As a matter of fact, a composite of fully 90 per cent of the initial medical

reports coming in on hernia would read somewhat as follows: "While on duty carrying a heavy object, patient noticed a pain in the right groin. Examination made later, reveals a tender relaxed inguinal ring with impulse on coughing. Diagnosis: Traumatic inguinal hernia. Treatment: Hernia reduced; patient ordered to keep off his feet. Prognosis: Total disability until operated." Under remarks will be found: "Request permission to operate." While the man undoubtedly has a hernia, such a medical report is hardly consistent with other facts surrounding the case and is obviously of little value to the commission in determining cause and effect and in deciding responsibility under the written law. While a more accurate medical report might clarify the situation, nevertheless, it would not remedy the basic faults which lead to so much misunderstanding and indecision regarding industrial hernias.

Underlying faults in industrial conception of hernia: In the legal and lay conception of hernia, as expressed in the workmen's compensation law and the rules provided to administer it, the underlying thoughts deal entirely with the character of the accident and the time effects of the injury. While this conception usually leaves no doubt in the case of "real traumatic hernia," where the accident has been severe and the results definite, it leads to great confusion and dissatisfaction in those described in the law as "all other hernias." In the other than real traumatic cases, it very occasionally happens that the strain or blow was such as to cause an immediate descent of the hernia, accompanied by severe pain, and that the claimant immediately communicated such facts to one or more persons. As a rule, however, one or more of these various immediate elements is lacking and the cases gradually shade off from the conditions required to make a hernia compensable, to the strain where the only symptom is a local discomfort of mild degree and the hernia remains incomplete and only potential. Manifestly, the variations in these hernias are of degree only. All of the other than real traumatic hernias are pre-formed and potential for varying periods, and when conditions are right, no matter how severe or mild the strains, or whether the hernias protrude through the rings all at once

or gradually over days or weeks, the ultimate effect on the man is the same. It therefore appears that if in any of these other than real traumatic hernias, industrial responsibility is to be assumed, it should be assumed in all. For even the least of these may cause the greatest disability; and the relief of disability is the foremost principle behind workmen's compensation and of the industrial surgeon.

Can we not reclassifiy hernias from a clinical and disability standpoint and co-ordinate this with industrial responsibility and provide ways and means of relieving disability in all cases of industrial hernia. I would place all hernias in two groups.

In group one are the real traumatic hernia, as defined, and the strangulated hernia, both emergency surgical conditions, and the incompletely reducible hernia, not necessarily an emergency condition, nevertheless, disabling and only relieved by operation. The clinical indications are clear and the responsibility of industry is only limited by other than medical considerations surrounding the case. These cases should have both treatment and compensation.

In group two are placed all other hernias of whatever degree or cause occurring during employment—more than 95 per cent of all industrial hernias. In practically all the immediate disability is moderate and relieved by the application of a properly fitted truss. This much, at least, industry should be responsible for; it is, therefore, suggested that responsibility for treatment shall be immediately accepted in all group two cases, no matter how trivial the accident may appear, and that the attending surgeon shall be authorized to provide the workman immediately with a truss. The attending surgeon shall make a full and comprehensive report to the commission on a special blank for that purpose. For this service examination and report, the attending surgeon shall receive a suitable fee. There will naturally be a number in whom permanent wearing of trusses will not be satisfactory. The immediate disability, the first and often the only responsibility of industry, has been relieved, without loss of time for the workman or undue expense to industry. Further consideration of each case may then be given with additional

procedure as may be deemed expedient and proper by the commission.

The experiences of the Arizona Industrial Commission in relation to the industrial hernia problem has probably not been vastly different from those of similar bodies in other states. Up to perhaps 1927 or 1928, comparatively few hernia claims were accepted for compensation and operation. As time went on, however, the commission, often under pressure, and with no sharply defined line to be drawn between the compensable and the non-compensable cases, gradually extended medical and compensation benefits 'till by 1933, when the present administration took office, a large proportion of the cases were being accepted for operation or compensation or both.

The costs of investigation, treatment and compensation increased tremendously, not only in hernia cases, but in many other conditions, and this, together with greatly lessened premium payments, was seriously menacing the compensation fund. To meet the situation, the commission, along with other economies, attempted to reduce hernia costs by adhering strictly to the stipulations in the law. For perhaps a year, this policy was successful, at least as far as compensation and medical costs were concerned. The disability of the workman, however, was receiving scant consideration, and because of exaggerated reports, demand for consideration by employers, employees and lawyers, and because of the illy defined provisions in the law, constant argument, expensive investigations and economic losses obtained. Consequently history repeated and the commission now finds itself confronted with the problem of again readjusting its attitude in dealing with hernia cases.

It is to meet this situation that I ask the medical profession to discuss the problem and to assume its natural responsibility by leading the way.

As a comparison of costs and to indicate what could be done under the suggested manner of treating industrial hernias, I have taken the files of 1934 as representing an average year. During 1934 there were 111 hernias ranging from inguinal strains with incomplete hernia to complete hernias.

Of the 111 cases, 63 or 56.75 per cent were awarded compensation and operations at an

average cost of \$325.00 per case—a total of 20,462.00 dollars.

Forty-eight or 43¼ per cent were compensated to the extent of actual time lost and medical costs, an average of \$28.00 per case—a total of \$1,352.89.

The total for the 111 cases was \$21,814.89, an average of \$196.53 per case. These costs include medical, hospital and direct compensation only. They do not include costs of investigation, time lost by workmen in pressing claims and numerous other economic and monetary losses. Neither do the 111 cases represent all of the hernias which developed during the year for many were not reported. The number reported in 1935 is probably double that for 1934, and at the present time claims are coming in almost daily. For purposes of discussion and comparison, however, the group is sufficient.

Assuming that five per cent of the 111 cases would come under group one of the proposed classification and that the average cost of \$325.00 per case would continue, and assuming further that the cost of examination and report, plus fitting truss would be \$15.00, and assuming further that 50 per cent of group two cases would be later treated by subcutaneous injection at an average cost of \$50.00, we have the following estimate:

Group one	5 ½ cases	@ \$325.00	\$1,787.50
Group two	105 ½ "	@ 15.00	1,582.50
Group three	52 ¼ "	@ 50.00	2,637.50

An average for the 111 cases is \$54.12 per case.

It is possible that some cases in group two may require compensation for short periods and that some of them surgery and perhaps a greater proportion will require injections. Such additional cost could not exceed two-thirds of the total and there would still be a cost saving of more than 50 per cent, together with the elimination in great part of all argument, excess investigation costs and various other economic and monetary losses. Even a greater consideration perhaps would lie in the fact that industry would be assuming its rightful responsibility to employees and all hernias occurring in the course of employment would be adequately provided for.

I am not taking up technique or relative merits of the three forms of **treatment**, reten-

tion by truss, truss plus injection and cure by operation. Suffice it merely to mention that there is ample recorded experience and evidence to state that:

1. Disability in a great majority of hernias may be satisfactorily relieved by properly fitted trusses;
2. Approximately 98 per cent of hernias treated by injections are completely closed and permanently retained and, in competent hands is free from discomfort or complications and does not incur great expense or loss of time; and
3. The cure of hernia by operation is necessary in a small percentage of industrial hernias.

Conclusions

1. Hernia is of frequent occurrence in industry and is a serious industrial problem.
2. Except in conditions described as "real traumatic hernia," the present workmen's compensation laws and the rules which govern their administration lead to much confusion, dissatisfaction and unnecessary expense in handling industrial hernias in Arizona.
3. In hernias classified in the law as "all other hernias," the distinction between the one termed compensable and the one termed non-compensable is of degree only.
4. Relief of disability is one of the underlying principles of workmen's compensation and should be the first thought in medical treatment.
5. If industry as a whole is responsible for any "other than real traumatic hernia," it should be responsible for all, at least, to the extent of relieving the immediate disability.
6. In the vast majority of industrial hernias, the immediate disability can be relieved by the application of a properly fitted truss at small cost to industry and without lost time for the workman.
7. A plan is proposed whereby through a clinical and disability classification of industrial hernias, all cases can be immediately accepted as responsibilities of industry and appropriate treatment inaugurated without expensive delay.
8. The savings in operative fees, hospital costs, compensation and investigation costs and

numerous economic and monetary losses will permit industry to accept its rightful responsibility in all industrial hernias.

9. A considerable study of the subject has convinced me that the suggested procedure is practical and sound and that with the leadership and cooperation of the medical profession of the state, it can be successfully carried out and result in a satisfactory solution of the industrial hernia problem.

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TREATMENT OF HERNIA BY THE INJECTION METHOD

(From the Department of Surgery, Southern Pacific General Hospital, San Francisco, Calif.)

FRANK R. GIRARD, M. D.
San Francisco, California

(Read before the Arizona State Medical Association April 23-25, 1936, Nogales, Ariz.)

If told that injecting a mildly irritating solution into a canal approximately four cm. long produces in from 30 to 40 days a dense plug of fibrous tissue obliterating that canal and fusing the surrounding structures, you would probably say, as many surgeons have said, "it can't be done." Shown, microscopic sections of strong dense connective tissue produced by such injections in animals and in humans and, thousands of patients who formerly had inguinal hernia and now have their inguinal canals obliterated by connective tissue from such injections no evidence of hernias, would you still say, "it can't be done?"

Professor Billroth, the great German surgeon, had the vision to predict that if a solution could be perfected which, injected into the inguinal canal, would cause proliferation or connective tissue, operation for cure of hernia would be practically eliminated.

For the past 100 years attempts have been made to cure hernia by introducing into the inguinal canal substances to produce chemical inflammation and scar tissue to close the canal. The chemicals formerly used were often so powerful that abscesses, destruction of tissue, peritonitis, and even fatalities resulted. The ethics of the gentlemen doing such work were often questionable, and they justly received the condemnation of the medical profession. No animal experiments were done to find non-toxic, non-caustic, solutions. No histological examinations were made to prove that normal connective tissue was produced.

During the past few years interest has been revived in the cure of hernia by injections by men whose standing is unquestioned. Much experimental work has been done on animals to prove that the solutions used are non-toxic in even the peritoneal cavity and veins. The tissue has been examined histologically from

a few hours after injection to several months, showing gradual development of plastic exudate in the recently injected cases to fibrous tissue in later stages; in its early stages the greater part of the tissue consists of young fibroblasts; in the mature stage the fibroblastic tissue has been converted into dense non-elastic fibrous tissue in no way distinguishable from normal connective tissue.

With these facts it seemed altogether proper to attempt clinically to treat hernia by injecting the inguinal canal. To evaluate the merit of the various solutions offered, it was decided to inject the first 75 patients with Pina Mestre solution. The second 75 patients were injected with proliferol, reenforced by tincture of thuja, phenol and alcohol. The third 75 patients are now being injected with sodium psylliate. (sylasol).

The Pina Mestre solution contains the following ingredients expressed in percentages: 25 krameria, 16 catechu, 15 rosa canina, 15 rosa centifolia, 14 vaccinium myrtillus, and 15 monesia in 98 per cent alcohol. Proliferol is a distillate from the tinctures of several botanical herbs, to which is added thymol, tannic acid and benzyl-alcohol. The thuja mixture consists of Lloyds specific tincture of thuja 25 per cent, phenol 50 per cent, and alcohol 25 per cent. This is allowed to stand for 48 hours, and then decanted. Sodium psylliate (sylasol) is a five per cent sodium salt from the fatty acids of oil of psyllium.

Before beginning the treatment of patients, rabbits were injected intraperitoneally with 0.5 to 3.0 c.c. of Pina Mestre solution. The rabbits showed only slight reactions. When autopsied several days later, none of them showed any peritoneal reactions or adhesions except the rabbits receiving the 3.0 c.c., and those reactions were only mild congestion of the peritoneum and intestines.

It is absolutely essential to know what type of **hernia is suitable for injection**. A hernia must be completely reducible into the abdominal cavity, and held at all times by a properly fitting truss. Strangulated or incarcerated hernias are of course surgical. Any irreducible mass or suggestion of a mass in the inguinal canal contra-indicates injection. Undescended testicle and hydrocele are also surgical conditions. Asthma, hay fever, severe bronchial con-

ditions, prostatic hypertrophy, urethral strictures and any condition causing straining during urination, should be relieved before attempting treatment by injections or by operation. Overly stout patients with large pendulous abdomens causing increased intra-abdominal pressure, should be reduced before treatment. Hemophilia contra-indicates injection. Diabetes, tuberculosis, hyperthyroidism and syphilis may be treated, depending on the severity of the condition. Age is no contra-indication. One of my most gratifying results was obtained in a man 84 years of age, with a large direct hernia of 14 years standing. During the middle of the treatment he went through an attack of bronchial pneumonia, without damage to the proliferation already obtained. Six weeks later the treatment was continued to a successful conclusion. Femoral, umbilical and incisional hernias may be successfully treated but must be carefully selected. Due to adhesions and no definite sac formation they are often not suitable. Patients with nephritis, cardiac disease, high blood pressure and other condition causing debility, making them "poor surgical risks", can be safely treated.

Any surgeon using the injection treatment for hernia must know the technique of **fitting trusses**, and the type of truss for each individual case. One type of truss is not suitable for all patients; fitting left to the layman is almost invariably over the external ring, instead of over the internal ring. Not 10 per cent of the millions of trusses worn are properly adjusted. A semi-frame truss with counter pressure over the gluteal region gives as a rule the most efficient pressure and the greatest comfort. Elastic trusses are not to be used. The truss should be worn tight enough to cause an indentation or depression over the inguinal canal to approximate as much as possible the anterior and posterior walls of the canal during the solidification. Occasionally a truss too tightly fitted, especially in double hernia, will cause edema of the scrotum and enlargement of the cord. The truss should be worn day and night next to the skin for at least one week before beginning treatment, allowing the patient to become accustomed to sleeping in it, and the surgeon opportunity to observe if the hernia is held properly reduced, and if the skin tolerates the pressure. The truss is worn during the

treatment, and for one month afterward. It is then removed at night, but replaced before the patient gets out of bed and worn during the day, from four to six months, depending on the patient's type of work. If blisters develop under the pad they are easily treated with compound tincture of benzoin or dusted with bismuth formic iodide powder.

Occasionally a large scrotal hernia is impossible to retain properly with any type of truss. These cases I have put to bed, foot of bed elevated, and given them four to six injections daily; then the truss will hold the hernia perfectly reduced, and I finish the treatment in the usual manner.

By whom should this type of treatment be used? Its apparent simplicity is its greatest drawback; the method requires as much, if not more technical skill and surgical judgment than the operative method. It should be employed only by men, surgically trained with knowledge of the anatomy and pathology of the inguinal region, and with accurate diagnostic ability. Unfortunately men seeing only an occasional hernia and who would never dream of doing a herniotomy, will be tempted to employ this treatment, perhaps with danger and disappointment to the patient, and discredit on the method. It is as much a surgical procedure as is operation. The technique is as definite and exacting. The same knowledge and skill is required; the difference is that syringe and a solution are used instead of scalpel and sutures.

With the patient reclining on the treatment table, the pubic hair is clipped. The table is tilted to a moderately steep Trendelenburg position, and the internal ring is located two cm. up from the middle point between the anterior superior spine of the ilium and the spine of the pubes. This area is painted with merthiolate or tincture of iodine. A five c.c. luer syringe is used with two needles. The needles should be from 1.5 to three inches in length, depending upon the thickness of the abdominal wall, 22 gage, and short beveled. The skin is pinched up, and the needle inserted at right angles to the abdominal wall, down to the fascia of the external oblique muscle. Then with steady firm pressure, using the finger touch and not the weight of the arm, the fascia is punctured; a sudden "give" like the puncturing of the

head of a drum is felt. The needle is advanced .25 inch further, and the tip of the needle is then in the region of the internal ring. This is demonstrated by free mobility of the point of the needle. Then aspirate to make sure that a blood vessel has not been punctured; inject three c.c. of two per cent novocaine. The syringe is detached from the needle which is left in situ. The second needle is then attached to the same syringe and four c.c. of the sclerosing solution is drawn into the syringe. After a lapse of five minutes, to give the novocaine time to act, the syringe is attached to the needle in the internal ring; again aspirate to make sure that the needle has not changed position; inject the solution very slowly.

At times patients will notice a warmth in the area injected, and sometimes stinging in the penis and scrotum. This is due to irritating of the ilioinguinal nerve; it lasts only a moment and is not severe. If during the injection the patient should complain of severe pain ascending toward the umbilicus, the injection should be immediately stopped because that generally means that some of the solution has entered the peritoneal cavity. If this should happen, abdominal cramps and nausea may ensue, but rarely lasting more than one-half hour. After the needle is withdrawn, the injected area is gently massaged with a small gauze sponge. This frequently increases the hot feeling for a moment. A 0.5 cm. square of adhesive plaster is placed over the puncture as a marker. The patient remains quiet for about 10 minutes. The truss is then carefully adjusted. The table is leveled, and the patient is helped to the upright position by supporting the shoulders. This takes the strain off the lower abdominal muscles. The truss is then inspected with the patient standing. He then returns to his work.

The treatments are given three times weekly, but may be given daily if the reaction is slight and time is a factor. Occasionally a patient has to miss a treatment, which is unimportant. Some patients complain of lameness in the inguinal region for 12 hours following a treatment, but it rarely incapacitates for work.

I like to begin the treatments at the internal ring for the following reasons: The internal ring is the most important area to obliterate, and the sooner the better. With the internal ring narrowed, the truss can be better depend-

ed upon to keep the intestines within the abdominal cavity. If the external ring is injected last, a finger pushed through the external ring into the canal, can feel the needle tip and assure one that the injection is being properly placed. Then the cord lying posterior to the finger can not possibly be injected. This gives better control of the injections. After the first injection at the internal ring, the canal is injected, the injections being given about 1.5 cm. apart, toward the external ring, with the finger in the canal whenever possible. Several injections are given as a routine into Hesselback's triangle, and the last at the external ring. The internal and external pillars and the arch are injected with the finger pushing the cord out of the way.

I have found 12 treatments on the average to be necessary, although some patients may require 15 or even 20, and others only eight to 10. There is a marked difference in the way patients react regarding proliferation; the Negro proliferates rapid'y because of the tendency to keloid formation. The average patient receives three injections at the internal ring, four in the canal, two in Hesselback's triangle, and three in the region of the external ring. In direct hernias the injections are given first in Hesselback's triangle, with a finger in the external ring as a guide. The edge of the defect in the conjoined tendon can often be readily palpated and elevated a bit, and injected down to the tip of the finger. In treating direct hernias, a few injections are always given into the inguinal canal and the internal ring.

I use the thuja mixture to enhance the proliferating action of the other solutions; that it does this is easily demonstrated. The thuja mixture is given with a tuberculin syringe, and never more than six minims of this powerful mixture for an injection. The thuja is used at every fourth injection. For the patient receiving 12 injections, the 4th, 8th and 12th injection would be the thuja solution. When using sylvasol, no local anesthetic is needed. An injection consists of three c.c. The same technique is used as with proliferol, but no thuja solution is used with sylvasol.

A method of injecting has been advocated whereby the needle is inserted several cm. above the site of injection. The needle is inserted into the skin at about a 45° angle. The

point of the needle is directed downward toward Poupart's ligament. The peritoneal cavity is supposed to be less apt to be entered than when the needle is inserted at right angles to the skin. It is supposed to be a safer method for beginners. That may be true; but the cord rests on Poupart's ligament, and is more apt to be damaged by angular insertion of the needle than by injecting into the center of the canal.

When the treatment is finished, we expect to have the following changes in the inguinal canal: The external and internal oblique muscles which have been separated from the transversalis fascia by the protruding bowel are now solid'y welded together with the cremaster muscle and the spermatic fascia, and the loose areolar tissue in the inguinal canal. A firm dense fibrous inguinal splint is developed. Except that the hernial sac has not been removed this should give the same end results as an operation would have given. In many patients the sacs are obliterated I believe through chemical inflammation extending from the surrounding tissue fusing the walls of the sacs. Eventually the sacs are transformed into fibrous bands.

At autopsy have been found not infrequently hernial sacs extending onto the cords. The men with these were never conscious of having had hernias, and never had symptoms thereof because the necks of the sacs were so constricted that the abdominal contents were never able to enter the sacs. By narrowing and solidifying the inguinal canals we do exactly the same to the sacs. Unless the necks of the sac can be completely obliterated, treatment by injection will fail.

I recite in detail an example of failure: A patient had a large left labial hernia. She was given 12 treatments, and a firm proliferation in the inguinal canal was produced. Two months later she returned with a definite bulging and an impulse on coughing, but smaller than previously. She was given 12 more treatments. By this time the induration felt almost cartilagenous. After several months, wearing her truss all the time, she still had a small hernia. She was opposed to an operation, and for the third time we attempted to close the canal by injections. She received 36 injections without closure of the hernia sac. She finally submitted to operation; the fascia of the external

oblique was densely adherent to the underlying muscles; a large markedly thickened sac was dissected free; surrounding three-quarters of the circumference of the neck of the sac was a firm mass of fat about the thickness of the end of one's thumb which prevented the proper closure of the internal ring and obliteration of the sac. The density of the muscles and Poupart's ligament was astounding, it being with considerable difficulty that the needle could be introduced into them.

Microscopic sections. Dr. A. M. Moody, pathologist, reported upon microscopic sections as follows:

The scar tissue which has developed in sections of injected hernia is very dense, relatively thick and markedly hyalinized. This condition has occurred with a minimum of cellular reaction.

With operation only, a recurrence means a second operation—always more dangerous and more unsatisfactory than the original one.

The number of treatments is determined by the size of the hernial defect, the response of the tissues to the injected solution, and the amount of reabsorption which takes place after the first course of treatment has been given. I believe that the treatment should be considered in two stages. The first stage is the original course. The second stage is the period of observation, lasting from one to one and a half years. Patients should be carefully examined every two months after the truss has been removed. If an area is found which shows evidence of weakening, a few more injections should be given. Not until the patient has been under observation for from one year to 18 months can one feel sure that a permanent cure has been obtained.

In our series of 174 cases 19 or approximately 11 per cent, were recurrences following herniotomy. I believe that with the combined technique of operation and injections, if recurrence is threatened, that the necessity for operating on a patient the second time for hernia will be eliminated.

Many complications have been mentioned as likely to result from the injection treatment none of which, in our series of 174 hernias treated and under treatment at present, have we encountered. Infection, abscess formation, peritonitis, atrophy of the testicle and sterility

have all been noted as possibilities. The one common complication has been moderate swelling of the cord, lasting from a few days to several weeks, but always subsiding, leaving no permanent damage. A few cases have complained of swelling of a testicle for seldom more than 24 hours. One must be particularly careful when injecting the internal ring because of the proximity of the anterior crural nerve and the femoral vessels. When injecting this area I tell the patient to notify me immediately if there is pain running down the anterior surface of the thigh toward the knee. This happened in two early cases with no permanently bad result.

The injection treatment of hernia was first begun at the Southern Pacific General Hospital in July, 1934. At the time this paper was written a total of 174 cases had been treated or were under treatment. There were 129 indirect inguinal hernias, 19 direct, four scrotal, 19 recurrent following herniotomy; two femoral and one umbilical. In this series we had one definite failure, requiring operation. Eleven have required further treatment because of weakening of the canal due to complications such as vomiting, loss of weight from peptic ulcer, severe spasmodic coughing from tuberculosis and asthma, influenza, and improper wearing of a truss.

I know of no type of treatment in which co-operation of the patient with the surgeon is more imperative, especially regarding the wearing of the truss properly for the required length of time. The majority of our patients are rather ignorant laborers, and it is difficult to make them understand the importance of the properly placed and well fitting truss on the final result.

Considerable judgment must be used in accepting patients suffering from peptic ulcer, arrested tuberculosis, asthma, etc. They often appear to be in good physical condition and well suited for treatment. After the treatment is finished they may develop severe symptoms from their complicating disease which will have an unfavorable reaction on the hernia treated. I speak feelingly on this subject because I have recently examined two patients who apparently had satisfactory closures of their inguinal canals but one man developed an ulcer attack, with severe vomiting, hemor-

rhage, and loss of nearly 40 pounds in weight. During the attack he removed his truss and when he appeared at the clinic some months later, his truss was absolutely useless, being now entirely too large, giving no support to the inguinal canal. Consequently there was a slight return of his direct hernia. The other patient returned 14 months after the finishing of his treatment with slight bulging at the external ring of one week's duration. He stated that for years he had been receiving 50 per cent disability compensation from the Government for arrested tuberculosis associated with asthma, and that he had frequent violent coughing attacks, so severe as to cause emesis.

I cite these cases to show that while patients appear to be in good physical condition, histories should be carefully taken to determine if any condition might contra-indicate the injection treatment.

Recently all patients who had received treatment longer than six months ago were requested to report for examination, or to have their company doctors examine them if they lived some distance from San Francisco. To date, those who have responded show satisfactory closure of the inguinal canals, but I expect to find some who require a few more re-enforcing injections. It is most gratifying to note the interest in this method of treating hernia by the more conservative surgeons, medical schools and clinics, who several years ago showed little interest in it.

Those of us who are pioneering this work should give every aid to those wishing to test this treatment seriously, and in a thorough scientific manner. Every surgeon using this method on a large number of patients likely will have something constructive to offer from his observations. With the right men and institutions using it, a great deal of the prejudices will be removed. Much experimental work must yet be done in the matter of solutions, number of treatments required, and in judging the type of hernia suitable for this treatment. Should it be confined, as some men think, to small indirect, incomplete hernias, or should treatment of all types of reducible hernia be attempted? Refinements in technique and the types of trusses to be used must also come in for serious consideration.

We look forward in the not too distant fu-

ture, when the surgeon will find this method of treating hernia, a most valuable aid to the operative treatment, especially when used after operation to strengthen a post-operative weakening of the canal, thereby practically eliminating the need for re-operation.

Conclusions

1. A rational method of curing certain types of hernia is offered by the injection method.

2. It should be used only by men, surgically trained, with knowledge of the anatomy and pathology of the inguinal region and with accurate diagnostic ability.

3. The method is safe when used by experienced operators, but there are potential dangers when used by men with little knowledge, of the exacting technique and, of hernia in general.

4. The numerous complications mentioned are mostly theoretical, and have not occurred in my series of 174 hernias.

5. Many patients, poor subjects for operation, may be treated by this method and rehabilitated to useful occupations.

6. The value of the operative treatment of hernia can be greatly enhanced by the use of injections when a post-operative weakening is threatened or recurrence develops.

7. Economically there is a great saving of time and expense because loss of time from work and hospitalization are not required.

8. The wearing of a properly fitting truss for perhaps six months after treatment is most essential.

9. A careful check-up every two months for 18 months following the completion of the treatment should be made, and a few re-enforcing treatments given when signs of weakening are discovered.

10. Investigation of this method by hospitals and clinics where large numbers of hernias are treated will give this treatment the dignity and standing that operative procedure has.

DISCUSSION

DR. BROWN: Both speakers are to be congratulated; they have dived into a here-to-fore nearly forbidden field and done it in a conservative, scientific convincing manner. I have no criticism and relatively little to add to what they have said.

My interest in the injection treatment of hernia is through a sequence of events covering many years. My father had hernia. I recall as a small

boy the trouble he had with his trusses. He would never consider an operation. In the course of years many persons similarly afflicted with hernia and trusses who would not be operated have been seen. Many persons who had operations which are failures are known.

Some 10 years ago I developed a hernia which was operated by two of my very good friends in whom I have the utmost confidence and who I am sure did the best job possible; through the weakness of my own tissues it recurred in a short time. A year later the same hernia was repaired by a competent St. Louis surgical friend. It has held although he doubted that it would; but within the year I have had several attacks of pain indicating weakness in the lower portion. About one and a half years ago a weakness appeared in the right internal ring. About this time I heard of the Pino Mestre solution which was being distributed in this country by a son of an old school friend of mine; I was hoping to get in touch with him when one day Dr. Ralph Palmer told me of his interest in the injection treatment of hernia and that he was gathering data upon it. He soon gave me six or seven injections and apparently I am completely cured. No time was lost; I had no argument with my insurance companies. The two operations had caused me to lose about three months' time and to have considerable discussion with my insurance carriers.

I studied with Dr. Quillan of Chicago last fall and recently wrote him for a few facts. He has had about 10 per cent recurrence; they have been easily controlled by additional treatment. He would probably agree with Dr. Girard that they are not actual recurrences but merely under-treated cases. Dr. Quillan has used several solutions, some of which he made, but I believe in the main, he uses proliferol or sylasol. Dr. Quillan says that it is not necessary for the needle to enter the hernia sack. In one or two cases to be operated he injected the sclerosing agent mixed with a dye upon the hernia sack and found the colored solution within the hernia sack. Dr. Quillan has treated 344 cases. He has had no complications. He has seen two cases with sloughs, due to the sclerosing agent's being deposited subcutaneously instead of beneath the deep fascia. Sometimes patients get soreness in a testicle or swelling in a cord, but these are not serious. I had slight soreness in the testicle for several months after treatment.

Any material to be injected into a person first should be tested to see if that person is sensitive to it; also the induration in the skin from the test will give the physician an idea of how that patient's tissue will proliferate. I had reactions in my course of treatment on two afternoons; I was achy and tired and I had some pain. No reaction was incapacitating.

I have treated several cases, I believe successfully, with no loss of time and discomfort to them.

I believe Dr. Palmer's idea to take care of hernia occurring in industry is an advanced idea and one well worth considering. It seems to me that it will save money for the industrial commission and will be of great help to the men needing the treatments. I feel it is a distinct honor to have been asked to discuss Dr. Girard's and Dr. Palmer's papers.

DR. REESE (California): In our state we have a compensation law similar to that in Arizona. Hernia offers three factors for consideration: The patient, the corporation paying the bills, and the physician, each interested in the subject. Experience has proved that insurance carriers are magnanimous in considering hernia. Hernia is comparable to a tumor in a woman's breast; congenital weakness and outside contributing factors lead to its development. In hernia, chronic constipation and urinary disturbances are contributing factors (and severe coughing.—Ed.). One thing which insurance companies definitely pay attention to following a supposed traumatic hernia is nausea, vomiting, sweating, and slight shock. Such symptoms with the occurrence of the hernia support its traumatic origin. Dr. Palmer's suggestion and plan for the care and treatment of hernia in Arizona is most revolutionary and offers the patients all the breaks. If Arizona is to assume full responsibility for the treatment of these cases she must also prepare to assume full responsibility for any and all complications that may arise. Time is a great leveler. The injection treatment for hemorrhoid is not all that it promised to be; many are now avoiding this treatment. The treatment is far from fool-proof. Sterility has been recorded in several cases as a result of the treatment. The choice of solution must be a careful one if sloughing is to be avoided.

DR. FERGUSON: I have one question. Nothing has been said as to the type of work the patient may do while undergoing treatment.

DR. GIRARD: I appreciate the discussion. In reply to Dr. Ferguson: If a patient is doing heavy work, such as lifting, we request that he be given lighter work during the treatment. It is purely a matter of judgment. Dr. Palmer's plan is most revolutionary and altruistic. I think, however, that industry may be shown that there is a responsibility for them to shoulder. If hernia occurs during a man's work, industry certainly should care for it. This care is most expensive in the majority of states. In New York, for example, the records of the department of labor show that in the period from 1926 to 1930 the total cost for temporary disability was 76 dollars per person; between 1930 and 1934 the cost rose to 217 dollars per person, with an average medical cost of 170 dollars per person. New York compensates 40 per cent of a man's wages leaving a 60 per cent uncompensated loss. Adding the medical cost, plus 40 per cent compensation, plus the loss to the man himself, New York has a total cost average

of 687 dollars. The figures for California are not available. In San Francisco, however, the average treatment time is 19½ days which at four dollars per day represents an approximate cost of 80 dollars. The operating cost is five dollars. Next we add a 46 day period of total disability at five dollars per day making a loss of 230 dollars. Thus we can see that the average cost per person for this treatment is 315 dollars for San Francisco. Only time can tell how permanent the results from this treatment may be. Referring to the 10 per cent recurrence as Dr. Brown quoted from Dr. Quillan I would say that this represents under-treatment rather than recurrence. Some respond beautifully to a few treatments and the physician feels enough treatment has been given, while others need many treatments to close a hernia. I agree that thujia is dangerous but can give good results if used carefully. Of 175 cases we have never had a slough nor an infection. Men must exercise skill and care with the injection just as in surgery. One great advantage of this treatment is that potential hernia may be easily and successfully treated with such a degree of success that a man may secure employment otherwise denied him.

The injection treatment of hernia is comparable to the injection of varicose veins. At first, in the treatment of the veins, there was a multitude of solutions, now but one or two remain for general use. The same will be the case with solutions now being advocated for hernia. We are being constantly bombarded with various solutions for this purpose. These have not been sufficiently tested; we have only the word of the manufacturers that these solutions have the virtues claimed for them. Proliferol seems effective and worthy, whether it will become of permanent use only time can tell. Recurrences may be due to improperly placed trusses. I have in mind a case where the truss was found to be over the rectus muscle, fully 1.5 inches away from the inguinal canal. The proper position and placement of the truss is most important. As a matter of sterility, referred to by Dr. Reese, it seems odd that such a condition could occur as tests with animals show no such obstruction. Then, too, should one side become occluded, there still remains the other to function. The statements about sterility have come from men who have not done this work. Men who have done the work report just the opposite. In Minnesota, for example, of 1,500 recorded cases there is not one to demonstrate a sterility, a peritonitis, or an abscess. If this work is not done by men who are surgically minded and surgically trained, trouble will result. Dr. Brown spoke of a toxic condition following his treatments. While such conditions have been occasionally reported, none has been incapacitating, and it is rare that a man is kept from his work.

DR. PALMER: I appreciate the responsibility in the plan we have outlined for the care and treatment of hernia in Arizona. I shall see per-

sonally that no industrial case will be referred to a surgeon who has not given much study to the subject and who does not have the time to devote to the work; only the efficient man will be considered. Habits of living might have something to do with the cases of sterility referred to; it seems to be characteristic of men in the high income bracket to experience a period of sterility around the ages of 40 to 50, attributed by many to nothing more or less than habits of living.

It is true that California and Arizona have similar compensation laws. When California made a restricted ruling on hernia, Yuma, Arizona, was literally swamped with hernia cases coming over from industrial California. In turn when our commission made restricted rulings, these patients scurried back to California for treatment. From experience with the injection treatment of hemorrhoids and varicose veins, men who aspire to do this work in hernia must give it careful study and attention and keep the solution where it belongs.

LEUKEMIA; CASE REPORT

F. D. VICKERS, M. D.
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(Presented before the 45th annual session of the Arizona State Medical Association April 23-25, 1936.)

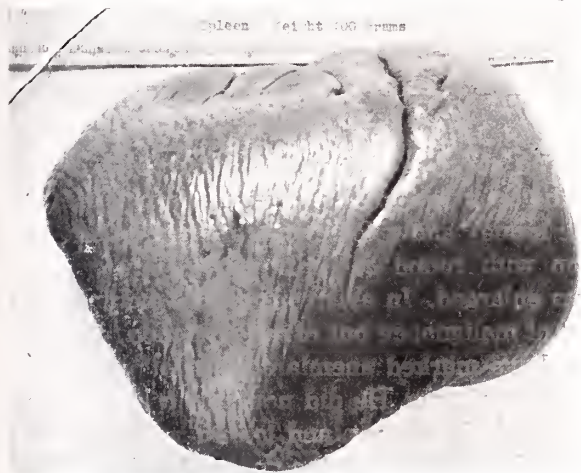
I report the more recent observations upon leukemia and a case which does not seem to fit into the usual leukemic picture.

Leukemia has a characteristic hyperplasia and variable clinical manifestations. It is widely distributed in the animal kingdom, occurring frequently in the fowl, and occasionally in horses, cattle, dogs, rats, and mice, and infrequently in humans. It may be acute or chronic. Acute cases may become chronic. There is aleukemic, plasma cell, chloroma, mixed cell and pseudo, leukemia all of which are part of the general picture and not separate diseases.

As carcinoma of mice can be passed from one animal to another by live tumor cells, so can leukemia be transmitted to mice whose normal blood forming organs have been destroyed by massive doses of x-rays. The factors that determine the success of inoculations are similar to those that determine the fate of tumor transplants. The produced disease is indistinguishable from the spontaneous. Leukemic blood cells of mice are not common immature cells but malignant with their own characteristics. Leukemia may be produc-

ed in mice by several agents including x-rays. Myeloid leukemia in irradiated mice is transmissible and indistinguishable from the spontaneous.

These malignant blood cells have the ability to produce leukemia with high blood counts with small or no tumors or aleukemic leukemia with large tumors. The type of disease is determined by several factors such as the char-



acter of the malignant lymphocytes, the resistance of the host and by such factors as x-rays and benzol.

Recent publications state that leukemic blood cells are formed from endothelial or reticular cells of organs such as the liver, spleen and bone marrow. Fibrocytes may display blood forming potentialities and the leukemic process may be due to the activity of the reticulo-endothelium tissue widely scattered throughout the body.

It is claimed that mouse leukemia is not caused by a virus, and hence in this regard leukemias fit the picture of malignancy. If we knew the cause of malignancies "we would be somewhere"; but acute mononucleosis with mononuclear leukocytosis is admittedly an infectious disease and some authorities mention a leukemia that has mononuclear leukocytosis as its characteristic.

The case I report is a perfect picture of infection. He started off at age 15 with severe sick spells—vomiting, chills, high fever, and pain which took morphine to relieve. He would be sick a week, more or less, and then better and up and around; but in a week or two he

would have the same thing all over again. He continued this for months without an abnormal blood picture. I couldn't make a diagnosis. He ultimately became seriously sick and had an attack of hemoglobinuria, nearly dying. His red cells were reduced to 1,250,000. His white cells were around 7000. Under arsenic his red cells gradually rose to 4,500,000. The whites also began to increase until in a few weeks they were from 30,000 to 60,000, and in four months they were as high as 160,000. He had varying percentages of myelocytes and much broken down white cell material. I am sure there was no mistake as I was checked by a laboratory. He was very sick at this time. But he began to improve, lost his blood picture and got up and around, still having the spells occasionally that he started out with. He ran along this way for several years and at the Fitzsimmon hospital was said to have hypernephroma of the right kidney. For a long time something was apparently wrong with the right kidney. Finally it broke down and was removed. Instead of curing him as was expected he had more periodic sick spells and finally again became continuously ill and near death's



door. He again improved, and was around with only occasional sick spells for several years. He then had a severe spell with continuous vomiting for a month and died—after being sick 15 years.

Dr. Willis W. Waite examined the kidney and spleen and reported:

"Kidney is 11 cm. in length and weighs 200 grams. The surface is deeply indented, coarse and nodular. On section the pelvis is irregular and somewhat dilated with thickened mucosa.

Microscopic examination: The glomeruli are largely obliterated by hyaline tissue; in the remaining ones the capsule is dilated and thickened and the glomeruli are invaded with round cells; in some areas the convoluted tubules are well preserved while in others they are atrophied and filled with colloid, giving a picture much like thyroid; the mucosa of the pelvis is thickened and greatly infiltrated with round cells; in some areas this infiltration extends far into the kidney substance, and the walls of the blood vessels show extensive thickening.

Discussion of kidney: The kidney is too small for his having had only one. Inflammation had destroyed a large part of it. The pelvis was dilated and the mucosa much inflamed, suggesting changes of a similar nature in the ureter. There was no evidence of tuberculosis.

The spleen measures about 15 cm. in length and weighs 400 gms. Microscopic examination shows extensive congestion; the lymphoid nodules are largely destroyed and there is a diffuse round cell infiltration.

Discussion: The spleen is congested and atrophic.

The cause for the change is not apparent. In leukemia extensive infiltration and hemorrhage into the kidney with extensive destruction of kidney tissue may result. One cannot say that such a condition did not start the kidney condition. The same may be said of the spleen.

Summary

During the 15 years of his illness he had no apparent enlargement of the spleen, no definite glandular enlargement and no evidence of bone disease. Up to the last sickness his weight was 180 pounds. During the severe spells he lost weight, but soon gained it back. His pus kidney, which I always believed was a leukemic infiltration was only a part of the picture or an accident which did not destroy him; and its removal did not cure him. During the "spells" he had albumin and white cells in his urine which cleared as soon as a "spell" was

over. Albumin and white cells were in his urine during the exacerbations after the kidney was removed just as before.

In the first months of his hemoglobinuria the blood picture was definitely that of myeloid leukemia. He had priapism, which occurs in some cases of leukemia. Finally came the broken down kidney which was removed; the pathologist said it had round celled infiltration. He had a gastrointestinal hemorrhage. Then he went 14 years without the leukemic blood picture, having the same spells that he started out with and finally died from exhaustion after continuous vomiting for a month. He did not die from uremia nor deficient kidney action. He did not have obstruction of the bowels. The pathologist report shows some destruction of the kidney and spleen from or with inflammation with round cell infiltration. The spleen was enlarged. In all this time the picture was not of malignancy but of inflammation. He did not have marked anemia except following the hemoglobinuria. He did not have cachexia. He weighed 180 pounds, and looked well between his sick spells even to the time of his death. He had no x-ray treatments.

In the treatment of leukemia the tendency is to try to reduce high white count by x-ray treatment, but this does not cure the disease. Blood transfusion is in order for cases with severe anemia. This does not cure the disease.

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SCORPION STINGS: CASE REPORTS

DR. E. J. GUNGLE.
Morenci, Arizona

(Presented before the 45th annual session of the Arizona State Medical Association, April 23-25, 1936.)

The Arizona State Board of Health reports 25 deaths in Arizona from scorpion stings from January 1, 1929, to June 30, 1935; during 1934 and the first six months of 1935, nine died whereas in this period there were only six rat-

tlesnake victims and one believed to have been from a black widow spider.

It is of sad memory that my first death in practice was an infant of 11 months from a scorpion sting. Vividly I recall again a middle aged miner in such a convulsive state from a scorpion sting that his manager had to tie him in a car to transport him 40 miles to town; and how futile were the remedies! For three days he sat in a chair in dire distress, but recovered. Two other adults with symptoms somewhat milder I treated with no apparent beneficial results.

The French physician, Cavaroz, who lived in Durango, Mexico, during the French occupation, gave a yearly mortality from scorpion stings in that city of 16,000 of between 200 and 250 or .0125 to .0150 per cent of the population.

Calmette¹, Todd², Jackson³, and Lope⁴ worked on the production of an antivenom for the treatment of the sting, but apparently without success. The work done by Mills⁵ in Mexico gives the clearest information as to the action of the venom with pathology produced and suggestions for treatment. He observed that scorpions were immune to their own stings and that their blood contained protective substances against venom. About one hour after a sting, to a child of 11, weight 8.5 kilos, with moderate symptoms, he gave four injections of distilled water and scorpion blood at intervals of half an hour, the dyspnea, cyanosis, and excessive oral and nasal secretions appreciably lessened; weakness and lethargy continued for about two days. This patient might have recovered unaided but the improvement began when symptoms are ordinarily most severe and recovery was much quicker than usually occurs without specific treatment.

Anatomy and habitat of the scorpion: Scorpions are common throughout southwestern United States and especially in the warmer, humid, littoral regions of Mexico. They live in the deep cracks of the sunburned clay, in rotting wood, beneath stones, etc. It is estimated that over 150,000 scorpions are killed annually in the small city of Durango, Mexico.

Scorpions form the pedipalpi order of arachnidae. They resemble diminutive lobsters from a half to eight inches in length with strong, prehensile palpa. The last six joints of the

segmented abdomen narrow into a tail usually carried in a forward curl above the back which can be thrown in advance of the body by a sharp lashing motion, in defense or attack. The tail ends in a curved horny spine containing two orifices which connect with the poison gland in the last segment. When the tip of the spine is clipped, there exudes from 0.0005 to 0.005 gm. varying with the size and condition of the animal, of clear colorless and slightly viscid fluid resembling dilute glycerine and coagulating slightly on heating. When the legs and the body are incised, droplets of straw-colored, opalescent blood exude.

The scorpion's color is brown, but the shade varies with the immediate environment; almost colorless, translucent scorpions become brown and opaque in a few weeks if placed in black surroundings.

Habits: The scorpion is chiefly nocturnal in roving. It preys on spiders or insects, which it kills by repeatedly stinging and by crushing with the heavy palpa. Spiders stung nearly always die in convulsions as may larger animals. For actual defense, the sting alone is used, being lashed forward repeatedly and rapidly.

Suicide of scorpions by their own sting has been disproved. In terrific battles frequently seen in specimen jars, the victor is always stung many times, but survives, unless too severely torn by his opponent's palpa. The usual end of these conflicts is a cannibal feast with the vanquished scorpion torn into small pieces and devoured. **Resistance of the scorpion to its own poison** has been the basis for the use of scorpion blood in the preparation of an anti-venom. The **experimental inquiries** come under the following headings: Can the poison injected by a scorpion produce death in animals and human beings? What factors influence the action of scorpion venom? Is there a natural or acquired immunity to scorpion venom? What are the gross pathological changes of importance? What are the effects of spinal drainage in animals and humans gravely ill from scorpion stings?

A puppy, weighing 1.78 kilos, was stung on the nose once and on the abdomen twice by an active scorpion from Tepic, a *centrurus gracilis*—the most virulent type of scorpion. He immediately became restless, rubbing his nose,

and biting at his abdomen. In six minutes he began to swallow frequently and to paw at his throat. Constantly increasing quantities of glary mucus flowed from his mouth and nose, and he rolled his head from side to side. Dyspnea was noticed first in 13 minutes accompanied by occasional short barks. He staggered when walking and in 34 minutes vomited much thick mucus and defecated. In an hour convulsive twitchings developed in the extremities, and were converted into general convulsions by stroking him. For about an hour convulsions recurred with decreasing intervals of relaxation, until they merged into continuous rigidity lasting about eight hours. During this time, the dyspnea increased to where respirations could scarcely be counted, the mucous membranes became intensely cyanotic, and the temperature rose to 108 F. By 10 hours the clonic rigidity had lessened but did not entirely disappear for an hour—resulting in death 12½ hours after inoculation. Death was apparently from asphyxia due to paralysis of the respiratory center.

An anemic under-sized boy of 12, while sleeping, was stung three times on the abdomen by a *centrurus gracilis*. The symptoms were: Numbness, formication, and a sense of thickness of tissue began immediately in and about the site and spread rapidly, chiefly upward toward the chest. He vomited once, felt anxious and very nervous and complained that his tongue felt too big for his mouth. Saliva and nasal mucus increased, the eyes became suffused and photophobic, and the sensation of an increasingly large ball in his throat caused him to swallow frequently, to clutch at his neck and try to dislodge it with his fingers. Within about two hours he was extremely dyspneic and cyanosed; the respiration was 48 and pulse 136.

Although no reactions came at the points of inoculation they were incised freely and a light dressing was strapped on and kept moist with alcohol. The second incision caused a general convulsion, during which the child did not wholly lose consciousness, but complained bitterly of headache, of deep pain in his eyes and of cramps in his extremities. Fifteen minutes later a second convulsion occurred, with unconsciousness. As it was impossible to give medication by mouth, hot saline enemas con-

taining 3.0 gm. of potassium bromide were given in succession, but were as often expelled during convulsions. The hypodermic injection of 0.01 gm. of morphine sulphate started another convulsion, showing the extreme reflex response. Convulsions recurred for about three hours, with intervals of partial relaxation lasting from 15 seconds to less than a minute, but gradually they merged into a clonic spasm, with moderate opisthotonos. Coarse mucous rales appeared throughout both lungs; the breathing became extremely rapid and shallow; the pulse rose to 160 and the temperature to 106.8. Feces and a little urine were voided in the earlier convulsions. The muscular rigidity disappeared about two hours before death, which occurred about 14 hours after the sting. The direct cause of death appeared to be asphyxia.

These cases demonstrate that scorpion venom may cause death in animals and human beings, the deaths following symptoms apparently originating from cerebrospinal effects.

The venom is less toxic during cool seasons. The aged and infants have more severe reactions than do others. Repeated stings of a patient appear to have no influence on subsequent inoculations. Experiments in animals prove there is no permanent immunity.

Pathology: Mills was fortunate in getting two autopsies on humans. One, a man of 70 died three days after a sting, and another, a child of 11 months. These were supplemented by 38 autopsies on puppies and rabbits. These latter showed practically the same pathology as in the human: Marked engorgement of the vessels of the pia of the brain and cord with occasional petechiae; engorgement of the great sinuses of the dura; excessive fluid about the brain and the cord, producing serous meningitis. This fluid was clear or slightly turbid, colorless, becoming slightly turbid on boiling; it reduced Fehling's solution in but three cases and the field of the average film contained 67 polymorphonuclear leucocytes, two mononuclear and five endothelial cells. The quantity of fluid in the animals was far more than in normal animals. In 34 out of the 36 autopsies, there was absolutely no local reactions at the points of inoculation; the other four had a moderate vascular dilation and edema, but no enlargement of lymph nodes. No abnormal

changes were seen in the blood, such as laking or excessive clotting, nor were there gross changes in the arterial walls as are produced by the highly toxic hemorrhagic rattlesnake venom. The mucous membrane of the nasopharynx was greatly congested and covered with thick ropes of mucus. The thoracic and abdominal viscera were intensely congested, large and soft as in common asphyxia.

Mills had the *centurus gracilis* as well as less virulent species, sting animals. The results varied considerably; the less virulent merely produced mild, mostly local reactions whereas the highly virulent produced fatalities. There are periods too, when the poison is exhausted.

Case reports: In the past 10 years I have had 20 cases with severe reactions with one death. A child of about 14 months was brought in with typical symptoms. A lumbar puncture relieved the first severe symptoms; the child was taken home and despite the admonition to the parents to return should symptoms recur, they failed to do so.

In June, 1920, my first case had treatment based upon the actual pathology and I believe this to be the first so treated in Arizona. This was a girl, 17 months of age, gravely ill with the typical symptoms. She was promptly, completely and startlingly relieved by one spinal tap.

A boy of six, seen one hour after the sting, was in a severe clonic state with marked cyanosis. Lumbar puncture emitted fluid under such pressure that it shot far out from the needle; one tap was all that was required.

A boy of 12 weighing 70 lbs. was stung on the finger at about 7:00 p. m. He was seen at 11:00 p. m. in a cyanotic convulsive state. The spinal fluid was under such pressure that it streamed about three inches from the end of the needle and was lost; drainage was done until the pressure appeared normal. Recovery was rapid.

A man, 25, was stung on the foot about midnight. He was first seen about 7:00 in the morning in a mild convulsive state. One spinal tap yielded fluid under increased pressure and he made a prompt recovery.

A child, 16 months of age, was stung in the foot in the evening and seen about 2.00 a. m. in a clonic convulsive state, with no cyanosis.

Efforts to tap the spine were unavailing. Sodium amytal was administered and the child went on to complete recovery.

Other cases were those of infants and young children on whom clinical data were not kept, but my conclusions are that tapping the spine may be life-saving. Sodium amytal relieves spasms which continue after the spinal fluid pressure has been lowered.

Summary

The treatment of scorpion sting by use of scorpion blood is possible, but highly impractical, because of the difficulty of obtaining the blood in sufficient quantity, and because of the rapid deterioration of its protective properties. Extreme ages and poor physical condition of the patients contribute to the dangers of scorpion stings.

Spinal drainage is indicated in severe cases, with convulsions and asphyxia threatened, as particularly manifested by the cyanosis; the amount released, depends on the pressure.

The use of sodium amytal orally or intramuscularly, relieves the spasmodic conditions and other symptoms when the pressure has been lowered.

With return of any of the symptoms, other lumbar punctures, or further administration of sodium amytal may be necessary.

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DISCUSSION

DR. STROUD: When in Mexico recently I became interested in a serum being used there for scorpion stings, a sample of which I present. In the jungle states of Mexico there are many deaths from scorpion stings. In our own Southwest physicians frequently are called to treat, children especially, for this virulent poison. We may see a child crying with pains running over its body in electric flashes. He may develop convulsions of a frequency too rapid to count. We used to put them under chloroform. Throat spasms are also characteristic with the patient fairly clawing at the throat for relief. Spinal drainage has been found useful, but I have had no occasion to use it since this serum was brought to my attention. Its effects are truly marvelous. Injected at the site of the sting even hours after the onset recovery is certain, with further treatment unnecessary. It

is a rather peculiar thing but the scorpion scourge seems to attack Arizona every three years; the last wave was in 1935 with seven deaths.

DR. STORTS: If one can not find the place of the sting, where is the injection made?

DR. BAKES: Are recoveries from scorpion stings complete. I have a patient in mind who developed a paralysis of the external rectus of the right eye following a scorpion sting. How often are sequelae noted?

DR. GUNGLE: It is true that the scorpion menace seems to come in waves in Arizona. I hope this new serum proves to be of definite and lasting value. Its disadvantage is that one can not always find the sting cite. I use ether although chloroform is all right when only a few whiffs are necessary. I have not observed permanent disabling.

DR. STROUD: I believe one can always find the cite of the sting by thorough examination. I should like to call attention to one severe case of scorpion sting treated by a quite unusual method. This child was in such severe convulsions that two double beds were put together in order to keep her from falling off the bed in her writhings. The parents used home therapy giving two ounces of paregoric; the child recovered.

THE NON-CONVULSIVE TOXEMIAS OF PREGNANCY

DUDLEY FOURNIER
Phoenix, Arizona

(Given before Maricopa County Medical Society)

It will only be possible to cover the more important phases of the subject more or less briefly.

First, what is meant by toxemia of pregnancy? The developing ovum makes increasing demands upon the mother to meet its nutritional and eliminative needs. She responds with heightened activity of her circulatory, respiratory, and eliminative systems. If she has a good balance among them the pregnancy will go to term without untoward effect, but with the products of fetal and maternal metabolism increased, the efficiency of her organs lowered, poisonous metabolic products retained and the mother becoming toxic. To this state, the term "toxemia of pregnancy" is applied.

For many years investigations in urine and blood chemistry and the pathological changes found at autopsy have failed to show the caus-

ative agent in toxemia. For this reason there is no therapeutic agent that cures.

There is constantly going on in the mother's system the neutralization of the products of fetal metabolism, but should the lungs, the skin, kidneys, or bowel fail to care for the increased toxic load, poisonous metabolic products would be retained which produced a whole train of symptoms.

The first and simplest variety of toxemia, due to pregnancy and its characteristic symptoms are moderate and persistent hypertension, slight albuminuria, more or less dull headache and malaise and occasionally, nausea and vomiting.

The toxin's selective action on the various organs of the mother's body determine the type of toxemia with which we have to deal. Kidney involvement is apparent in edema, in diminished urinary output and in albuminuria with casts. When the heart muscle is adversely affected, a cardiac symptom complex predominates. The liver, though not often involved, bears the attack of toxins poorly and the symptoms are jaundice, vomiting, or collapse, which may develop suddenly.

The central nervous system is invariably involved with headache, malaise, and sensory disturbances. Persistent vomiting is most likely central in origin as local efforts at cure are wholly ineffectual. The ocular symptoms are neurological in origin; they rapidly disappear following delivery. The combination of epigastric pain and suboccipital headache, a fairly common precursor of an eclamptic attack, may readily be accounted for—the epigastric pain being from the sympathetic nervous system and the headache a bulbar involvement.

The prognosis in these toxemias depends a great deal on the organs involved; for instance, when kidney involvement is accompanied by diminished urinary output, the mother's toxin is considerably increased. When the liver is attacked the course that the toxemia follows is usually as rapid and fatal as might be expected, were toxins to reach the maternal blood stream with their virulence undiminished.

Cardiac toxemia is especially dangerous when associated with one of a nephritic type. The lower bowel is an ever present source of toxemia. Many become constipated as soon as they become pregnant. Several factors con-

tribute toward constipation. Among them are decreased activity, pressure of the growing fetus on the lower bowel and increase in appetite that is too often indulged in. Accordingly there is increased intake of food on the one hand and a decreased elimination on the other. Hyperemesis is often due to toxemia which is intestinal in origin and can be cured when sufficient intensive elimination of the bowel is brought about.

Pyelitis is almost always preceded by constipation and intestinal stasis, the bowel providing the pathogenic organism that readily attacks the urinary tract.

One may be presumed to be developing a toxemia if she complains of persistent headache, malaise, dizziness, irritability, nausea or vomiting, epigastric pain, and ocular symptoms and if these are combined with an elevated blood pressure and definite urinary finding it is positive evidence that the woman has a toxemia of pregnancy.

Hypertension almost always precedes albuminuria, but it may also be due to an intestinal stasis and is promptly reduced by an emptying of the bowel.

Hypertension is far more common in the last trimester than in the earlier months. One type of hypertension develops slowly with moderate increase of albuminuria and usually terminates in premature labor and death of the child. It shows chronic obliterative placental changes. One such case I had some months ago. This woman's blood pressure rose from 120 to 180 within a month's time. The fetus died and she delivered spontaneously. The placenta showed a necrotic area about the size of a 25 cent piece. She has completely recovered and is again pregnant.

The other type of hypertension develops suddenly and increases rapidly, being followed by a marked albuminuria, indicative of acute kidney involvement. Cases of this kind, if uncontrolled, commonly terminate in eclampsia. In one of this type blood pressure, in one week, rose from 118/80 to 182/124. The urine was loaded with albumin. All measures to reduce the blood pressure failed and it was deemed advisable to terminate the pregnancy by means of section. The baby was small for eight and a half months, weighing only four pounds. The mother made an uneventful

recovery and today her blood pressure and urine are normal.

I warn against the intravenous administration of magnesium sulphate. A patient was given 10 c.c. of a 10 per cent solution and she promptly went into shock. Her face and eyes were swollen, almost immediately, beyond recognition and she had frequent thready pulse. She was given calcium intravenously as an antidote. I shall give magnesium sulphate intravenously in the future with fear and trembling.

The effects of toxemia upon the child is serious. Since the placenta suffers so much from the agents of toxemia, it is only natural to assume that the child would be vulnerable. As a rule these children, at birth, are much below the normal. One wonders what is the subsequent history of these children. Is their vitality lowered and do they stand the diseases of childhood well?

In an article I read recently one pediatrician stated that they are all below par and most of them die before reaching five years of age. This, to me seems rather far fetched but these questions must demand our most careful attention.

UNUSUAL LITHIASIS

H. C. BUMPUS, M. D.
Pasadena, Calif.

(Read by H. C. Bumpus, Jr., M. D., before the Southwestern Medical Association Nov. 23-28, 1936 El Paso.)

In acute renal colic ureteral radiation is usually so typical and present methods of investigation so excellent that diagnosis is made with slight question of doubt. Occasionally, however, typical symptoms are encountered and after painstaking investigation a stone cannot be demonstrated. It is the object of this paper to review the more common causes of this bewilderment and to call particular attention to a pseudolithiasis infrequently reported.

Besides the cystine and pure uric acid stones, fortunately rare recently formed stones with lack of density are the most difficult to demonstrate roentgenographically, and, therefore, most frequently missed. In a study which

Thompson and I made at the Mayo Clinic of 1001 ureteral stones only 21 or 2.1 per cent had not been demonstrated roentgenographically. This low percentage of negative results was undoubtedly due to reading of the plates by the urologists who had all cystoscopic and other data on the cases. Many stone shadows are indistinguishable from phleboliths and these and small calculi shadows superimposed on the shadows of transverse processes of vertebrae or of sacrum or ilium cannot be properly interpreted without the urologic data. Ureteral dilation above stones will clear up the diagnosis. Ureteral colics seem to be in inverse ratio to the size of the stones, for the smaller and more difficult to demonstrate, the greater the pain and discomfort they produce.

Cystine stones cast no appreciable shadows and their diagnosis without cystoscopic assistance would be nearly hopeless were it not for the fact that they are due to faulty metabolism of amino acids—an inherited condition fortunately rare; the world's reported cases do not number more than 200. The patient is usually cognizant of this family idiosyncrasy and assists the physician. In some cases an associated cystinuria exists and aids much in the diagnosis; but cystine stones do not occur without it and cystinuria has often been reported in the absence of stones. The filling defect in the pyelogram where the non-opaque stone replaces the pyelographic media confirms the diagnosis.

If the colic is on the right side, a diseased appendix must be considered. It is much better to erroneously remove a normal appendix than to subject the patient to the risk of peritonitis, provided the facility for adequate urological investigation is not obtainable. In the series of 1001 cases previously referred to appendectomies had been performed in 226. The physician must exclude stone if symptoms persist after appendectomy. Cabot reported 153 cases of stones in ureters, in 30 of which appendectomies had been performed.

A source of error in diagnosis which I wish to emphasize is exemplified by three cases which have left vivid impressions.

A student nurse, age 26, in September, 1926 had pain and tenderness about the appendix area, having been injured there 10 days previously. She gave a history of malaria, amebic

dysentery and mucous colitis. Acute appendicitis was the diagnosis and the appendix was removed; she had an uneventful convalescence. During the next two years she was a hospital patient on three occasions for intestinal toxemia; in October, 1928, diagnostic curettage and right oophorectomy were done showing chronic interstitial endometritis; the ovary was only a corpus luteum cyst. Six months later she had acute pharyngitis. In the fall of the year she had pain referred to the right sciatic nerve. Manipulations afforded some relief, but by the next spring she was ill. A cystoscopic examination showed a slightly enlarged right kidney with no blunting of the calices. An abdominal exploration was made with left oophorectomy. Convalescence was stormy; the incision was opened at the end of two weeks and multiple adhesions were freed. Histologic examination of the left ovary revealed simple cysts.

The same fall cystoscopic examination revealed a ptosed right kidney with ureteral kink; a plaster jacket was applied for sacro-iliac disease. At 30 years of age she had a fourth laparotomy for adhesions that the surgeon reports less extensive than at any previous operation. The next July she had severe, acute, abdominal pain, but the surgeon notices the pain is entirely contrary to normal reactions and a neurologist was consulted. Six months later, the pain persisting, the abdomen was opened again through a new incision and adhesions were freed. The following June, 1933, her sixth laparotomy, cholecystectomy was done for cholelithiasis. In September the cholecystectomy wound was excised and a fistulous tract resected. No relief of symptoms resulting an extensive gastro-intestinal study was carried out, the findings of which were inconclusive.

A year later she had sacro-iliac strain. Manipulation was done and a spica cast applied. I was then called. She was complaining of intense pain in the right side. Her kidney was not palpable although tenderness could be elicited by deep palpation in the right lower quadrant and at the costovertebral angle. The x-ray was negative and a pyelogram was essentially the same as the one made three years previously. A diagnosis of ureteral calculus opaque to the x-ray was entertained and multiple catheters left in the ureter for 48 hours

with the idea of dilating the ureter and removing the stone, or stones, by manipulation. Upon withdrawal of the catheters she had severe colic and passed several stone fragments. This was followed by further colic and passage of more stone fragments. A week later she was examined cystoscopically under an anesthetic and a Council stone extractor was passed up and down the ureter with no obstruction or stone being felt. Four hours later she had severe colic and passed four fragments. Relief of pain was not complete unless opiates were used, so the following day four catheters were passed up the ureter and left in place with complete relief of pain. Upon their removal the following day the previous symptoms returned and two of the catheters were replaced to control the pain.

The stone fragments were of a crushed stone about three mm. across. The external surface was gray and markedly spiculated. On micro-chemical examination the stone burned completely at a low temperature and sputtered like fat. It dissolved in ether and evaporation of the ether deposited needle-like crystals typical of fatty acids. It is not soluble in ammonia as is cystine and no ammonia odor evolved on addition of NaOH, in which the stone was insoluble. It was insoluble in nitric acid. Chloroform dissolved it promptly. On heating small particles on a slide, a globule was formed of each particle, which on cooling showed needle-like crystals.

Diagnosis: Urostealith; a minute amount of calcium may be on the surface but the inner portion is soft.

Urostealiths are rare. Keyser writes that fatty stones (urostealiths) have occasionally been described. Their source and chemical composition are obscure and little literature on the subject can be found. Joly says concretions of this curious substance have only been found in the bladder; they are soft, waxy or fatty, harden on exposure to air, are soluble in ether and benzine, melt on being warmed and leave a greasy streak on paper. The catalogue of the Hunterian museum says they result from injections of soap solutions into the bladder; in cases described in the literature this could not have occurred. Six cases of this form of concretion are known.

Thevenot reports renal calculi invisible to

the radiograph which do not ferment and whose cellular elements do not degenerate, are not mineral crystals but are soluble in ether and contain but little carbonate or phosphate. He classifies these stones, because of their chemical reaction, as urostealiths.

At the next cystoscopic examination of this patient I lavaged the kidney pelvis with 10 c.c. of ether. No untoward effect was demonstrable and 48 hours later I lavaged the kidney pelvis with 100 c.c. of ether allowing the ether to remain in the pelvis until it boiled and distension was uncomfortable. The withdrawn ether was saved and evaporated but no fatty acid crystals were found. No untoward symptoms developed as a result of the lavage. In spite of the many cystoscopic examinations and ureteral manipulations no febrile reaction nor increase in pulse rate resulted. I found no stones in the bladder or ureters. I continued to treat the case as one of renal colic. I obtained more calculi. I sent them again for analysis. This time the report came that the fat constituents were largely cholesterol, and that the stones had undoubtedly originated in a gall bladder. The next day when the patient presented herself at the office in acute pain and demanded further relief by urethral drainage I found upon separating the labia multiple fragments of stone.

The diagnosis of urostealith was changed to that of hysterical lithiasis; the question has remained in my mind that the other six recorded cases in the literature might have been of similar nature.

Hysterical lithiasis is by no means rare. The first case I encountered was a female, age 21, whose chief complaint was attacks of pain in the left side. The initial attack being so severe and hypodermics failing to relieve, she was anesthetized by her local physician. Prior to my seeing her she had had three similar attacks, the pain radiating round the flank to the bladder. There was residual soreness for five to seven days, and after one attack she claimed to have passed a stone. There was no other complaint.

I saw her in an attack with pains in the region of the left kidney radiating around the flank toward the bladder. There was rigidity of the left side of the abdomen, tenderness

(Continued on page 228)

SOUTHWESTERN MEDICINE

Printed by THE A. C. TAYLOR PRINTING CO., Phoenix, Arizona
Published monthly for the Board of Managers of the four constituent societies.

VOL. XX.

JUNE, 1936

No. 6

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SHALL WE DISCONTINUE AMERICANISM?

The Europeans who first established homes in America definitely desired to get away from the restricted lives they previously had been compelled to live. The outstanding part of their program was to promote individualism. They desired to worship God and to do all other proper things in their own ways and according to the dictates of their own consciences. America and Americanism have spelled opportunity to the average informed individual of the world. Men in our land have been able to rise in proportion to their abilities. One is not tied by tradition to a shovel handle or to a clerk's desk. It has been jokingly said that every boy born in America has a chance to become President.

It would not be in good taste nor entirely true and certainly it would be disgustingly boastful to say that America is the greatest nation in the world; but it truthfully may be said with seeming modesty that the average American citizen enjoys as ordinary and commonplace many things and privileges which the average citizens of other nations of the world regard as luxuries.

Although we do a great deal of blundering and messing around we usually accomplish what we plan to do. What we have done in scientific medicine is an example of that experienced in other fields of endeavor. We early began to educate young men as physicians and soon there were more medical schools than could possibly be needed. There were a goodly number of excellent schools and many others largely money making commercial institutions. Our colleges now have set-

tled down and are doing excellent work in both teaching and research. During recent years, our clinics have become recognized as being the super-teaching clinics of the world. Were the quacks and the cults and the patent medicine industry eliminated, it might be proudly said that America has arrived medically. As much might be said for phases of engineering, of manufacturing, and of many fields.

We should be proud of our average citizen, the clerk and the artizen, the farmer, the brick layer, the postman, etc. They live in comfortable homes surrounded by greenery. There are usually enough rooms in the average citizen's home so that the members of the family have adequate privacy. The home may even be furnace heated, electrically lighted, and otherwise furnished and equipped for comfort. Adequate plumbing is fast being installed. He has a washing machine, radio, electric appliances, daily newspaper, automobile, and telephone.

More than having these things, gadgets, conveniences and luxuries Mr. Average Citizen, perhaps a brick mason, may go to night school and learn to become a contractor, or an architect, or something else. He may then satisfy other ambitions. The clerk may set up his own establishment and soon become a competitor of, and in the course of time may live on the same street with and drive as large a car as that driven by, his former employer. The shoe cobbler's son becomes a lawyer, the farmer's son a physician. The nurse and the stenographer marry the physician and the lawyer and become society leaders. That's America! Why? We have done things our own way. The German, the French, the Italian, the English, the

Bohemian, the Greek, the wherever they came from brought ideas and ideals from a hundred lands. Those who came were daring adventurers. The coming to America was a start of their daring adventure which is still going on—bungling and blundering, trial and error—but lots of fun, and it's made Mr. Average American Citizen the envy of the average citizen of most other nations.

Shall we now discard Americanism and copy the nations that we ran away from anxiously to become Americans? Shall we regiment the medical profession, have the government take over the railroads, the telegraph, the money lending, and what not? It is only a step from one of these possibilities to the next. Shall we develop a caste system, a national religion, and other liberty destroying agencies? Shall we also cut wages to a pittance, destroy our comforts and luxuries, forbid free speech, place all young males in the army, and try generally to have Europeanism rather than Americanism?

If we wish to begin on such a program let us first give the matter serious thought.

Chester Ray Swackhamer, president-elect of the Arizona State Medical Association, is one of the better known of the Arizona surgeons. He has been identified with industrial surgery in Arizona since 1917. He was at Hayden one year, Miami two years, and has been at Superior since 1920 as chief surgeon to the Magma Copper Company.

Dr. Swackhamer has been active in organized medicine, having served Gila County Medical Society as president in 1926 and again in 1933 and 1934. He served two years as vice-president of the Arizona State Medical Association in 1931 to 1933. He also served as vice-president of the Southwestern Medical Association during 1935 and is now president-elect of that association to take office this fall.

Dr. Swackhamer graduated from Rush Medical College in 1913. He is also a graduate of the University of Chicago and he attended the University of Illinois. After graduation he located at Hibbing, Minn., where he stayed for half a year then he went to the Los Angeles General Hospital where he stayed for one and one-half years, coming from there to Arizona. He was married Sept. 3, 1912, to Daisy Nichols.

Mrs. Swackhamer has been prominent in the State Medical Auxiliary, having served as its president. Dr. and Mrs. Swackhamer have two sons: Robert Lewis is now a student at Stanford University in the Medical department.

In addition to being active in organized medicine and carrying on a heavy practice, he has numerous outside activities. He is a member of



the Hiram Club, president of the Apache Leap Golf Club, vice president of the Apache Council of the Boy Scouts of America, and executive board member of the same, chairman of Boy Scout Troop Committee, chairman of Salvation Army Advisory Committee; he is an officer in Hiram International, a Knight Templar and a Shriner. His avocation is golf. He has served several terms as a member of the board of managers of **Southwestern Medicine**.

WORDS

Words are the chief means of expressing thought. Each should be chosen to convey the desired shade of meaning. The fewest words that will express thought upon scientific subjects are ordinarily preferable to wordiness. A short carefully written paper in the fewest of well chosen words will have many more readers than will the same paper carelessly strung

together with many more words than actually needed. In such instances words actually conceal thoughts.

That a paper which an author has spent much time putting in shape may be considerably revised and likely improved by a good critic is no reflection upon either the author or his paper. Were the author to lay his paper away for a month or two he then probably would be as severe a critic of his own work as any other critic would be. The author considers his own viewpoint; the critic takes the reader's view.

As we have previously stated libraries are being filled—overfilled—with medical journals many of which will be only infrequently taken from the shelves. The less space a journal occupies the more perhaps does it justify its being kept. It is well to repeat that words may conceal thought whereas they should express it plainly and tersely.

Erratum: We are glad to credit Dr. Willard Smith of Phoenix for calling our attention to a misspelled word in the May, 1936, issue. The word "brassieres" is used whereas it should have been "braziers." Dr. Smith in his own inimitable way asked "Just what kind of a party was that?"

Erratum: We give credit to Dr. Maurice P. Spearman for calling our attention to an error on page 195 in the May issue in which the heading stated a recent staff meeting was held at the Hotel Dieu; it was held at the City-County Hospital.

WHY BE A MEMBER OF YOUR COUNTY MEDICAL SOCIETY

Guy C. French, M. D., President,
Maricopa Co. Medical Society.

AFFILIATION WITH YOUR COUNTY MEDICAL SOCIETY MEANS:

Betterment of the entire profession by reason of a closer social and scientific relationship.

An opportunity for greater development of the art and science of medicine through unselfish cooperation in work and study as fostered by scientific meetings.

Promotion of everything that is good for the profession by detecting and deterring those things which are inimical to the profession, especially in relation to social medicine.

Legal protection against suits for alleged

malpractice; a member with a just case need not fear the result of suit; professional standing does not protect a physician against suit, but membership in the society insures skillful counsel without expense to the member. This one feature of membership is worth the annual dues.

Membership in the Arizona State Medical Association and subscription to **SOUTHWESTERN MEDICINE** without additional cost; upon payment of an additional seven dollars a physician becomes a Fellow of the American Medical Association and receives its valuable **JOURNAL**.

Unity of the medical profession giving it a voice that will be heard and heeded by legislative bodies.

Protection of your degree against "isms" that would make their certificate—by legislation—the equivalent of your hard-earned diploma; dominance of the profession in handling local matters of health.

CAN YOU AFFORD TO DECLINE MEMBERSHIP?

UNUSUAL LITHIASIS

(Continued from page 225)

over the region of the left kidney and ureter. Morphine grains a quarter repeated at 30 minute intervals until three-quarters of a grain were given did not control the pain. Ether was necessary at 11 p. m. and again at 4 a. m. to control the pain; the attack was followed by intense soreness in the flank. It was believed that the patient had a small stone which did not show in the x-ray, and she was given repeated ureteral dilations. After the sixth she had a severe colic and passed a stone. This she presented to me with the utmost assurance of her gratitude for the successful outcome of my treatment. It was a piece of brick from a nearby hotel wall.

Another interesting case was that of a female, also a nurse, 35 years of age, who during the previous year and a half had had repeated attacks of renal colic with the passage of stones. Because the attacks were becoming more frequent and requiring considerable morphine to relieve, her physician referred the case to me. X-ray of the urinary tract showed multiple stones in the right renal area. Their

density made me suspicious, and upon holding her hand while the pyelogram was made the shadows did not appear on the second plate, as she could not tuck a small bag of stones under her flank.

The desire for morphine caused the malin-gering. More frequently it is the desire to attract sympathy as in the two other cases.

Braasch believes that some of the patients who pass calculi at frequent intervals suffer from this peculiar form of hysteria. It is advisable, therefore, in often repeated passage of stone to exclude pseudolithiasis by having a chemical analysis of the concretions.

Usually the stones presented are of silica and by scratching glass with them the necessity of chemical examination is avoided. However, in another case I encountered the stones were seeds which had been repeatedly soaked in blood and urine and dried until there was a coating of urinary salts and blood. On two occasions I have found stones in bladders placed there so recently that the absence of cystitis or trauma to the bladder mucosa disclosed the hoax.

It seems that the question when is a urinary calculus not a calculus at times may be a most pertinent inquiry.

C. W. Gerber,
Pres., Las Cruces

NEW MEXICO SOCIETY DEPT.

L. B. Cohenour,
Sec., Albuquerque

The following resolutions were adopted at the 11th Annual Meeting of the New Mexico Public Health Association in Carlsbad, New Mexico, May 7, 1936:

Resolved that this 11th annual meeting of the New Mexico Public Health Association express its sincere gratitude to the distinguished visitors from the east and west coasts, from Chicago and from the neighboring states for their generous and valuable contributions to our conference so ably presented and hereby invites them to attend our meetings in the future.

Whereas the New Mexico Public Health Association in its 11th annual convention hereby assembled has enjoyed and is enjoying the warm hospitality of the people of Carlsbad, be it hereby

Resolved: that we record and express our gratitude to the mayor and citizens of Carlsbad, the medical society, the management of its hotels and especially to our host, Dr. Puckett, for the excellence of the arrangements made for our convenience and enjoyment.

Whereas the standards of public health service achieved in New Mexico have won national recognition, and whereas New Mexico is one of only three states in the union that provide public health administration on a full time basis to all the citizens of the state and whereas this achievement is directly traceable to the policy of the non-partisan employment of professional health workers adopted from its inception by the New Mexico Board of Public Welfare,

Therefore, be it resolved, that the convention congratulates the successive legislatures and administrations of this state upon their political wisdom in granting us this freedom to develop and record its conviction that the continuation of this policy is of the first importance to the future welfare of the state.

Whereas the American Medical Association thru its bureau of public instruction is responsible jointly with the National Broadcasting Company for an important program of health education by radio, and,

Whereas the present program is inaudible by daylight to most of the people of New Mexico;

Now, therefore, be it resolved that this meeting

of the New Mexico Public Health Association petition the American Medical Association through the director of its bureau of public instruction and the National Broadcasting Company to broadcast its program at such a time and over such stations as will serve the people of this state.

Whereas propaganda is carried on by advertisement in the papers and otherwise, not for public welfare but for private gain, misleading the public regarding methods of diagnosis and treatment of serious diseases to the great detriment of public health;

Now therefore, be it resolved that the President and Congress of the United States be and hereby are urgently petitioned to assume the function, through proper administrative channels, of preventing the advertisement of remedies sold for profit for the alleged cure of cancer, tuberculosis and syphilis. And that this resolution be forwarded to the President of the United States and to the Representatives and Senators of New Mexico in the National Congress.

The New Mexico Public Health Association consisting of health officers, sanitarians and public health nurses and members of the public interested in the public health takes cognizance of the valuable contribution made to the sanitation of the state through the pit toilet project of the WPA, whereby the spread of fatal summer diarrhea amongst the young children of the state may be controlled, but notes with alarm that funds have been withdrawn for the continuation of this project and urgently begs the administrator of the WPA to find means to restore the May allotment to the above mentioned project in the interest of the public health.

The following New Mexico physicians attended the A.M.A. meeting in Kansas City: Drs. Stuart W. Adler, L. B. Cohenour, A. B. Stewart, William Henry Woolston, M. K. Wylder, Erwin W. Johns, LeRoy S. Peters, William H. Thearle, J. R. Van Atta, M. R. Warden, and Claude C. Keeler, of Albuquerque; Albert S. Lathrop, D. F. Monca, Francis I. Proctor, and Frank E. Mera of Santa Fe; Howard M. Cornell, Dulce; H. A. Miller, Geo. W. Jones and Clyn Smith of Clovis; J. W. Stofer, Gallup; N. F. Wittaw, Los Lunas; William V. Worthington, Roswell; William H. Gordon, Fort

Stanton: V. N. Minas and H. M. Mortimer of Las Vegas; Herbert B. Masten, Springer; and C. H. Gellenthien, Valmora.

The following New Mexico women attended the Woman's Auxiliary to the American Medical Association at Kansas City: Mrs. Geo. W. Jones, Clovis; Mrs. H. M. Cornell, Dulce; Mrs. D. F. Monaco, Santa Fe; and Mrs. M. K. Wylder, Albuquerque.

Dr. J. Rosslyn Earp, director of the Bureau of Public Health of New Mexico, has on hand copies of a booklet on "Essential Facts About

Cancer," which he will distribute free of charge to anyone interested enough to inquire for it.

Dr. LeRoy Peters of Albuquerque, New Mexico, gave a paper before the section of "Miscellaneous Topics" of the American Medical Association, May 13, 1936, on "Sanatorium Care of the Tuberculous."

The officers for the New Mexico Public Health Association for the year of 1936 and 1937 are: President, James R. Scott, M. D., Albuquerque; vice president, Emma Maylor, R. N., Fort Sumner; and secretary-treasurer, Paul S. Fox, C. E., Santa Fe.

James J. Gorman
President

SOUTHWESTERN ASSOCIATION DEPT. Orville E. Egbert
Secy.-Treas.

DR. J. A. RAWLINGS

"A Pioneer Physician of El Paso, Texas."

J. Mott Rawlings, El Paso.

Dr. Junius Ambrose Rawlings, pediatrician and obstetrician in active practice in El Paso since 1897, died on the 23rd of March, 1936, af-



ter a short illness of influenza followed by bronchial pneumonia.

Dr. Rawlings was born in Roundstone, Kentucky, on March 2, 1886. He lived as a child at Big Springs and as a youth in Brandenburg, Kentucky. He attended the public schools and entered Louisville University at the age of 19, graduating at 21 as a qualified

practitioner of medicine. He immediately entered practice in Kansas City, Missouri.

In 1899 he married Sarah Esmond Mott, teacher of kindergarten in Kansas City. Mrs. Rawlings was born in Lansingburgh, New York, had the honor and distinction of being the first teacher of kindergarten in Kansas City, and the first to open a school for training kindergarten teachers west of the Mississippi river. Their children, born in El Paso, and dates of birth are: Junius Mott, January 17, 1900; Mrs. Charles Stewart Mott, nee Ruth Rawlings, October 18, 1901; (Elizabeth, June 23, 1903, died August 29, 1904 of spinal meningitis) and Mary Jeannette, December 6, 1906.

Dr. Rawlings early manifested a decided preference for obstetrics and infant care. He soon became associated with Dr. Mosher, Kansas City's outstanding obstetrician. In 1896 he went to New York City for post-graduate work at the Sloan Maternity Hospital. While there he overworked attending all possible deliveries. He returned to Kansas City early in October and on the 20th he had a moderately severe pulmonary hemorrhage.

In January, 1897, he contracted diphtheria. That spring his sputum was found positive for tuberculosis. He consulted Dr. E. W. Schaufler of Kansas City, who advised him not to continue practice in a climate as damp and rigorous as that of Kansas City. He came to El Paso, in October, 1897, by way of the Santa Fe Railroad, having stopped at numerous towns on the way; his wire to Mrs. Rawlings read: "At end of line looks good to me come on." Mrs. Rawlings came bringing their household goods and a horse and a cow. They lived in various parts of El Paso but built a home in 1929 at 4700 Hastings Ave. in Austin Terrace, where Dr. Rawlings passed away.

On arriving in El Paso, in December, 1897, Dr. Rawlings opened an office in the Wells Fargo Building. After two months he associated himself with Drs. Alward White and D. Hunter Huffaker in offices in the Morehouse building. In 1910 he moved to 214 Roberts Banner Bldg. and was associated with Drs. Huffaker, Kluttz, and Darnall. He joined offices in 1912 with Drs. W. L. and C. P. Brown, and in 1922 went by himself at 411 Roberts Banner Bldg., where he practiced until taken with his fatal illness.

In 1912 Dr. Rawlings went abroad for about nine months study at various hospitals in Berlin and Vienna, especially watching work in obstetrics and pediatrics. Following this period he devoted himself exclusively to children's diseases and obstetrics. Years of untiring work were devoted to free clinics in obstetrics and pediatrics. He also organized the school of instruction for midwives and through his insistence to the City Council regulations were passed forbidding a midwife to deliver babies unless she had a minimum of instruction and shown herself qualified by passing both theoretical and practical examinations.

Aseptic precautions and Crede's method of installation of silver nitrate into the eyes of infants for the prevention of birth blindness were enforced. Maternity death rate and infant blindness were thereby greatly reduced in El Paso. Dr. Rawlings was for many years president of the board of health of El Paso and in this capacity made many suggestions along the line of public health, sanitation and hygiene that have since proved of inestimable value to the community.

Returning from abroad in 1912 he introduced the tuberculin test for cows for the elimination of tuberculous milk producers. Pasteurization of milk, regulations for dairies and advice regarding water supply and sewer disposal were presented by him. The old incinerator plant was largely the result of his efforts. The hiring of public nurses by the department of health was also the result of his advice, and to him also fell the duty of instructing these public health nurses in obstetrics and infant feeding.

Dr. Rawlings was always active in organized medicine. The El Paso County Medical Society was organized by the combined efforts of Dr. F. W. Gallagher and Dr. Rawlings in 1898.

Many prior attempts to get the physicians together were unsuccessful. Dr. Gallagher, an older man, was made the first president, and Dr. Rawlings the first secretary, which position he held for two years; he became the sixth president of the society.

In the course of the years, Dr. Rawlings read many papers before the local society and elsewhere, always showing a great interest in problems of infant feeding and maternal care. The following is as complete a list of his medical publications as yet compiled:

"Five Acute Infectious Diseases of Childhood," listed in the order of their importance: Scarlet fever, pertussis, diphtheria, measles and chicken pox. Dr. Rawlings in the discussion of this subject stated: "In placing them thus I have placed diphtheria after whooping cough and you probably wonder at that, but I will show you that many more lives are destroyed by whooping cough and its complications each year than by diphtheria"

"Pyelitis in Infancy and Childhood" was published shortly after 1912. The course of the disease is thoroughly and completely discussed, the paper being divided into description, etiology, pathology, symptoms, complications, diagnosis, treatment, and diet. The predominance of the disease in female children, the more fatal outcome under two years of age, and the commonly severe acute course, but usually good terminations are all discussed, as well as the fact that prognosis is much more unfavorable when renal tuberculosis, calculus or tumor complicates the picture.

"Obscure Fevers of Infancy and Childhood" was read before the Medical and Surgical Association of the Southwest in Albuquerque, New Mexico in December, 1917. In the discussion of this topic Dr. Rawlings pointed out the ease with which the temperature center in infants is disturbed and therefore that high temperatures in infancy are commonly, if of short duration, of less serious prognostic import than in adults. Determination of temperature by rectum only, is stressed. Seasonal causes, gastro-intestinal disturbances, typhoid fever, tonsillitis, laryngitis, bronchitis, influenza, pneumonia, and complications are always to be kept in mind and ruled out. Obscure fevers in infants under three years are most commonly due to the following conditions in

the order named: Otitis media, acute intestinal infections, lobar pneumonia, and Holt's inanition fever. "After three years of age probably tuberculous infections cause us the most trouble and also typhoid must likewise be considered."

"Ruptured Uterus with Report of Cases" was published in January, 1915. In this paper a fatal case due to weakened uterine fibers following previous hard labors and the strain occurring in a woman who had an unusually large and pendulous abdomen, causing stretching of the posterior fibers at the juncture of the vagina and os is discussed. Rupture took place posteriorly at the point of junction of the vagina and os. Pituitrin had been used in small doses as the patient had seemed incapable of delivering the child after a long and difficult labor. Finally version and extraction had to be done after forceps could not be placed and the baby was found to be dead. Mother died shortly.

The titles of other papers are: "Status Lymphaticus," "Occipito Posterior Positions in Labor with Treatment," "Diphtheria," "Scarlet Fever," and "Tonsillitis."

Numerous papers on child welfare problems were written in the course of the years, indicating the community problems that were ever present in his mind in relation to the poor, and the needy and their children. Many were written for nurses outlining rules for obstetric and infant care.

In addition to his work in civic and community health matters and strictly medical work, he was a conscientious supporter of the First Presbyterian Church of El Paso. He was an elder and took a most active part in the welfare and activities of his church.

Numerous trips to Eastern pediatric and obstetrical clinics marked a part of his continued post-graduate work.

Just prior to his death, Dr. Rawlings was in charge of the pediatric clinic and ward at the El Paso City County Hospital and during the recent epidemic of pneumonia, he saw and treated over 70 cases of pneumonia in children, both bronchial and lobar, not losing a single one of them. He was also active in the care of feeding infants at the East El Paso clinic. It was felt that his own case of influenza

and pneumonia was probably contracted from some of the many cases that he saw in public duty, the care of which taxed his never too great reserve strength.

Dr. Rawlings died after a 10 day illness with an acute influenza complicated by bronchopneumonia; a large thrombus had formed in the aorta, taking origin from the aortic valve, and extending towards the great vessels of the neck. The heart showed scarring of the conduction bundles on the left side, presumably as a result of diphtheria in 1897. Much scarring and possibly low grade activity of the original tuberculosis was also present. Outside of a slightly enlarged prostate and moderate scarring of both kidneys, other organs were in excellent condition.

It seems fitting here to add that the friends that he made during his life exhibited a marvelous response during the days of his illness and particularly at the funeral services held in the First Presbyterian Church. Even at this time it is difficult for us who were nearest to him to realize the great variety of interests he had, in doing for the common welfare of the people of this community and of how untiringly he gave of himself to one and all who requested his help.

The secretary is glad to report 220 paid-up memberships to date. The old members of Arizona, New Mexico and El Paso County have responded nicely, and we are particularly gratified to report that we are getting a nice membership in northern Mexico and from west Texas as far north as Amarillo and Lubbock. The men from the panhandle and plains country have been outspoken in their approval of the type of program that we are featuring and are sending in applications for membership.

President James J. Gorman represented the Southwestern Medical Association at the Arizona state meeting at Nogales and the New Mexico state meeting at Carlsbad. He reports keen interest on the part of the membership of both associations for the Southwestern activities and program.

Chairman of the program committee, Dr. E. W. Rheinheimer, reports that the members of his committee in New Mexico and Arizona have been in close cooperation with him and during the past few weeks he had had under way the actual construction of the program for the November session in El Paso. This is a slow and laborious task for the reason that a second prospective speaker cannot be contacted until a definite refusal has come from the previously invited prospect. Four speakers have accepted. Perhaps by next month announcements of a more nearly completed program can be made.

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, Dr. P. H.
Director New Mexico State Bureau of
Public Health.

The Carlsbad Meeting: The keynote caught by this writer at the Carlsbad meeting was on the theme of cooperation. It was neatly summarized by Dr. W. W. Bauer of the American Medical Association when he said: Health officials need doctors and doctors need public health officials and the public needs both. Dr. Reginald M. Atwater of the American Public Health Association spoke to a joint session of the medical society and the public health association on team work. His speech consisted of a series of illustrations of which the first was particularly happy. He pointed out that although the discovery of all contagious cases of syphilis would be an enormous task the control of syphilis depends essentially on discovering that small proportion of such cases—not more, he said than five per cent—that are both contagious and promiscuous. Working alone the health officer may find that even this task is too much for him; but physicians and health officers together can discover the promiscuous contagious cases and control the spread of the disease.

Dr. Karl Meyer was another who spoke so appositely to the condition of those who practice therapy as well as to those who practice prevention that one regretted that any member of the convention should have missed either of his two papers or any of his impromptu reports. No doubt his papers will appear in due time in this journal. In the meantime I pass on a hint of great prac-

tical importance gleaned from his very fine discussion of undulant fever. Do not rely on the agglutination test for the diagnosis of this disease. Insist also upon **both** a skin test and a report on the phagocytic index. Cases with severe undulant fever may have no agglutinins and on the other hand patients with tuberculosis may produce agglutinins for *brucella abortus* even though they have no undulant fever.

If only I could report all the useful discussion that took place in the lobby or at meals. On such an occasion Dr. Meyer warned me that plague may have already infected rodents in New Mexico. If so, he said, we shall find it not by a random survey of the rodents but by recognizing a human case. Warn the doctors to keep in mind that possibility. I am doing so.

I recollect with particular pleasure a breakfast with Dr. and Mrs. C. L. Martin of Dallas. The resolution on the control of advertised "cures" for cancer was in part an outgrowth of that breakfast party. There may yet be others. It is hard to measure the ultimate results of the personal contacts made at our scientific meetings, but it is certain that they are of importance to the public welfare as well as to ourselves.

THIRTY-FOUR YEAR RECORD

"The Physicians Casualty Association of Omaha, has recently published its report for '34 years of uninterrupted usefulness' in which they show payments to physicians for sick and accident claims of \$535,052.98—over a half million dollars. The report further shows they have a surplus fund of \$1,350,000 as evidence of their financial ability to pay what they promise to sick or disabled members."

Stephen Schuster,
President

EL PASO COUNTY SOCIETY DEPT.

L. O. Dutton,
Secretary

MINUTES of the regular meeting of the Staff of the El Paso County Hospital, Wednesday, May 20, 1936.

Present: Drs. Akeroyd, Awe, Barrett, Cathcart, Causey, Cummins, Curtis, Duncan, Dutton, Gaddy, Gallagher, Gorman, Green, Gwinn, Hatfield, Hardy, Holt, C. C. Homan, Ralph Homan, Hughes, Jamieson, Lynch, Marrett, McCamant, Morrison, Rennick, Rigney, Rodarte, Earl Rogers, Will Rogers, Shaffer, Smith, Spearman, Spier, W. H. Stevenson, H. E. Stevenson, Strong, Ernest Thompson, Robert Thompson, Vandever, Varner, Von Almen, West, Jordan, Hardwick, Waite, R. B. Homan, Sr.

Excused: Drs. Brown, Cunningham, Gambrell, R. B. Homan, Jr., Liddell, Mason, Mengel, Miller, Multhauf, Neil, Pickett, Safford, F. P. Schuster, S. A. Schuster.

Absent without excuse: Drs. Armistead, Britton (ill), Goodwin, J. Mott Rawlings, Stowe and Waggoner, and Drs. Terrell and Werley (consultants).

Dr. Gwinn read the minutes of the April meeting and they were approved.

Dr. McCamant presented Dr. J. J. Wallace, Field Director of the American Public Health Associa-

tion of New York City, who complimented El Paso on the remarkable progress in health work during the last two to three years.

Dr. West introduced his brother, Dr. J. W. West, of Twin Falls, Idaho, who is visiting here.

Two case reports, with diagnosis and autopsy report withheld, had been mailed to all members. These were discussed and tentative diagnoses offered by some of the men, after which the autopsy reports were read and colored motion pictures of specimens were shown by Dr. Waite. "Discussion of Cases" (found in another column). Dr. Waite was complimented on the excellence of his colored moving pictures, and it was agreed that a similar program should be given at the next meeting, but that fuller histories should if possible be obtained. It was explained that in the first case discussed it was impossible to obtain a very good history as the patient was irrational.

Dr. Homan said the board had given Dr. Butler a month's leave of absence, and presented Mrs. Gallagher as acting superintendent.

Dr. Robert Thompson read the report of the efficiency committee and it was approved. It was

noted that there had been no institutional infections since the change in the operating room on April 20.

Dr. Gwinn read a letter from the board of managers notifying of the acceptance on the staff of Dr. Jordan as junior on gynecology and Dr. Hardwick as junior on G. U.

Dr. Gwinn read a letter from Dr. Vandevere asking to be promoted to the rank of senior on E. E. N. & T. There was much discussion over the fact that there are six seniors already on this service, and only two juniors, but it was pointed out that several of the seniors seldom if ever come to the hospital. Mrs. Gallagher told the staff that tonsillectomies were being done by interns with no staff supervision and said this should not be. Dr. Gwinn said Dr. Vandevere should take his turn at clinic service. It was suggested that some of the inactive members be dropped, and the attendance at staff meetings was checked with this in view, but it was found that they had all attended the requisite number of meetings or had been excused according to the by-laws.

Moved by Dr. Ernest Thompson that Dr. Vandevere be made a senior on E. E. N. & T. Seconded by Dr. Stroud. Carried.

Dr. Barrett said Mrs. Gallagher had asked him to say that the county attorney had ruled that according to law anyone applying for admittance to this hospital must be admitted, if their physical condition warranted hospitalization, regardless of financial condition; and that the board wished an expression of opinion from the staff on this.

Moved by Dr. Gallagher that the board be asked to request a ruling from the county commissioners and the board of aldermen that none except indigents be admitted to this hospital. Seconded by Dr. Ralph Homan. Carried.

Dr. Green said the law might compel the hospital to admit patients who could afford to go to private hospitals and pay a regular doctor's fee, but that it could not compel the doctors to treat them, and he was in favor of declining to do so. Dr. Hardy said he thought nothing should be said about this until an answer was received from the commissioners and aldermen to the request in Dr. Gallagher's motion.

Dr. Rigney said, in this connection, that insured cases who were given emergency treatment here and then taken into private hospitals should pay for their emergency treatment.

Moved by Dr. Awe that Dr. Causey be promoted to the rank of senior on gynecology to fill the vacancy left by Dr. Blanchard's resignation. Seconded by Dr. Marrett. Carried.

Moved by Dr. Marrett that the staff meetings be adjourned until September. Seconded and carried.

Clay Gwinn, Secretary.

A meeting was called of a number of the younger medical men of El Paso to have dinner with Dr. Homan, his brother, Dr. Ralph, and Dr. Crimen. It was presented to the meeting that the Homan Sanatorium was unable to meet expenses as a private sanatorium, due to the state having entered into state medicine as far as tuberculosis is concerned, treating not only indigent cases but pay cases for a fee so far below that obtained in the usual private sanatorium that it was impossible to operate the sanatorium at a profit; for the Homan Sanatorium this is particularly true since it is located within the city limits, and has to pay city, county and state taxes and has a large funded debt and no brotherhood nor railroad practice that gives steady income.

Three plans were evolved to prevent closing the building completely: First, to make the hospital into a tuberculosis and medical sanatorium; second,

to make it into a strictly medical hospital; and third, to convert it into a general hospital. The third plan appealed to the men present.

Announcement has been made in the papers that it will be completely and modernly equipped, including complete x-ray and physio-therapy. Modern and thoroughly equipped diet kitchens are already present with means for sterilizing all dishes and utensils.

The building is fire-proof, of modern structure and was built with the possibility of conversion into a general hospital. All partitions are of steel. The Homan hospital is the only fire-proof general hospital in El Paso. They plan to spend some 40,000 to 50,000 dollars on equipment and interior changes. There is to be medical, surgical, pediatric and obstetrical wards with a possibility of a contagious and tuberculosis wing to be added at a future date.

There are splendid sun parlor rooms on the roof, reached by modern self-operated elevators. Almost every room has a toilet and bath and is made into two parts with an inner and outer room. This lends itself admirably for a better type hospital room. Wards of two to four beds are also contemplated for patients of moderate means.

Management would still be retained in the present hands and the doctors of El Paso are invited to join in sending the patients to this newly and modernly equipped, fire-proof hospital.

The following El Paso county physicians attended the A.M.A.: Drs. Felix P. Miller, H. T. Safford, J. W. Cathcart, C. M. Hendriks, Robert B. Homan, Jr., Charles F. Rennick, and Frank P. Schuster.

Dr. L. O. Dutton of El Paso spoke on the "Life Story of Hypersensitive Individuals" before the Auxiliary of the El Paso County Medical Society at the home of Mrs. H. H. Stark, 4515 Cumberland Circle. Mesdames H. T. Safford and Felix Miller presided at the tea table. Other hostesses included Mesdames W. M. Branch, C. P. Brown, Ernest Duncan, R. H. Greer, A. W. Multhauf, J. Mott Rawlings, Paul Rigney, Scurr L. Terrell, H. T. Safford, Jr., James Vance, Frank Goodwin, Eric Speer, Russell Holt, Arnold Stevens, and M. P. Spearman.

The annual health roundup for doctors' wives and families for El Paso was held March 30 and 31 under the direction of Dr. Steve Schuster, president of the medical society.

The Woman's Auxiliary to the El Paso County Medical Society met May 11th, 1936, 8 p. m. for the installation of new officers. Mrs. George Turner is the new president; she named the following committee women: Mrs. T. C. Liddell, general health; Mmes. Sam Rennick and John T. Bachman, child welfare; Mrs. J. Rogde, vital statistics; Mmes. J. A. Rawlings and B. R. Stevens, weed eradication; Mrs. Maurice Spearman, hygiene; Mmes. C. M. Hendricks and Henry F. Pipes, physical examination; Mrs. Felix P. Miller, music; Mrs. Henry T. Safford, Jr., program; Mrs. J. Hal Gambrell, telephone; Mmes. L. O. Dutton and H. H. Varner, year book; Mrs. O. E. Egbert, publicity; Mrs. J. Travis Bennett, historian; Mrs. C. H. Mason, research.

Other officers who were installed include: Mmes. Henry T. Safford, Jr., first vice-president; J. Hal Gambrell, second vice-president; Leslie Smith, third vice-president; Walter H. Stevenson, recording secretary; W. W. Britton, corresponding secretary; and Clay Gwinn, treasurer.

The new board of directors include: Mmes. E. W. Rheinheimer, Orville Egbert, J. Leighton Green, and Ralph Homan.

Dr. Orville E. Egbert of El Paso, opened the discussion on Dr. J. J. Singer's paper entitled "Col-

lapse Therapy in Pulmonary Tuberculosis" which was given in the section of "Miscellaneous Topics" Topics at the A.M.A., May 13th.

Dr. C. E. Hendricks of El Paso, was one of those chosen to open the discussion on a paper entitled "Sanatorium Care of the Tuberculous" given by LeRoy S. Peters of Albuquerque, New Mexico.

A wing has been built at Masonic Hospital for the use of the crippled children—quite a boon, due to the excessively crowded condition heretofore present.

Dr. Bloyce Britton is back at work and seems in most excellent health.

Dr. W. E. Vandevere left for Houston Saturday. He expects to visit in Baton Rouge, La., Tennessee and Jacksonville, Florida, and to return June 10th.

EL PASO COUNTY MEDICAL SOCIETY

The meeting of the El Paso County Medical Society was called to order April 13, 1936, at 8:10 p. m., by Dr. S. A. Schuster at the Hotel Dieu Nurses' Home.

The minutes of the previous meeting were read and approved.

The program consisted of the following:

Dr. K. D. Lynch read a paper on "Ureteral Injuries;" Discussed by Drs. R. Thompson, W. R. Curtis, R. Hardwick and K. D. Lynch.

Dr. W. R. Curtis read a paper on "Horseshoe Kidney" and discussion was by Drs. A. Thompson, E. D. Strong, R. Hardwick and W. R. Curtis.

Dr. M. P. Spearman read Dr. Vandevere's paper on "Ear, Nose and Throat Problems in Tuberculosis"; discussed by Drs. Duncan of Taylorville, Ill., S. A. Schuster, C. F. Rennick and M. P. Spearman.

A letter was read from Mrs. E. W. Rheinheimer thanking the society for its cooperation in conducting the annual physical examinations of physicians' families.

A letter was read from Dan Mowrey, supervisor, WPA, District 20, inviting the members of the society to refer deaf patients to the class in lip reading at the vocational school conducted by the emergency education division of WPA.

Dr. Rennick read the March report of the Central Medical and Dental Service.

Dr. E. D. Strong made a motion to send a resolution to the late Dr. J. A. Rawlings' family relative to his activities as a member of the society; seconded by Dr. P. Gallagher and carried. Dr. Schuster appointed Drs. W. W. Waite, G. Werley, and R. B. Homan, Sr., as the committee to prepare this resolution.

Dr. Orville Egbert requested information concerning Dr. Rawlings' part in the organization of the El Paso County Medical Society so that he may include this in his obituary report.

Dr. C. Awe stated that a group of citizens are seeking to establish a Memorial Baby Clinic in honor of Dr. Rawlings.

Dr. P. Gallagher offered an amendment to the constitution and by-laws of the society as follows:

ARTICLE 6, sentence two shall be amended to read "These officers shall be elected annually except the delegates and the secretary-treasurer." A final sentence shall be added to read "The secretary-treasurer shall be elected for an indefinite time, and shall receive compensation decided upon by the remaining officers and approved by the society."

The application of Dr. Von Brieson was read and referred to the Board of Censors.

Dr. Egbert suggested that it might be advisable to have a special economics meeting.

Meetings adjourned at 9:00 p. m.

A special meeting of the El Paso County Medical Society held on Monday, April 20, at Hotel Dieu Nurses' Home, was called to order by Dr. B. F. Stevens because of the absence of both Drs. S. A. Schuster and George Turner.

Dr. L. O. Dutton read the by-laws of the Central Medical and Dental Service.

Dr. C. F. Rennick outlined the working arrangements of the bureau at present and outlined the special advisory committees. Dr. Rennick introduced Mrs. Davis, Miss Hinson and Mrs. Paul Gallagher of the Central Medical and Dental Service.

Dr. L. Smith read the report of the Contract Committee.

Dr. Rennick read the reports of the collection committee, the public relations committee, the hospital committee and the office reports.

Dr. J. T. McCamant read the report of the indigent committee.

There was a general discussion of these reports by the members.

Dr. S. Newman wanted to know if PWA work was done through the Central Medical and Dental Service. He was advised that it was not.

Dr. Ralph Homan pointed out that no contract can be made with a government agency without the approval of the medical society; general discussion of this subject by the members.

Dr. Rennick asked for some suggestions as to solving the hospital situation stating that it was difficult to handle hospital cases through the Central Medical and Dental Service.

Dr. Ralph Homan made a motion that the delegates go to the state meeting at Houston in May uninstructed. This motion was seconded and carried.

Meeting adjourned at 9:00 p. m.—L. O. Dutton, M. D., Secretary.

The meeting of April 27, 1936, was called to order at 8:00 p. m., by Dr. Stephen Schuster at the Hotel Dieu Nurses' Home.

The minutes of the previous meeting were read and approved.

Dr. Mildred Murray presented a specimen of a still born anomalous fetus.

The program consisted of the following:

Dr. J. W. Cathcart read a paper on "X-ray and Radium Therapy," discussed by Drs. George Turner, B. F. Stephens and J. W. Cathcart.

Dr. G. Werley submitted a paper on "Congenital Heart Disease," discussed by Drs. Duncan, Waite and Werley.

Dr. F. P. Miller read a paper on "Diaphragmatic Hernia," discussed by Drs. B. F. Stephen, Major Williams of Wm. Beaumont Hospital, Drs. Awe, Cathcart, and Miller.

The application of Dr. Delphis Von Brieson was approved by the censors and he was accepted as a member of the society by a unanimous vote.

The amendment to the constitution relative to the term of office and salary of the secretary-treasurer, after a general discussion was declared out of order by Dr. H. B. Homan.

Adjourned. L. M. DUTTON, M. D., Sec.

The meeting of May 11, 1936, of the El Paso County Medical Society was called to order at 8:00 p. m. by Dr. Stephen Schuster at the Hotel Dieu Nurses' Home.

The minutes of the previous meeting were read and approved. The program consisted of the following:

Dr. James Vance submitted a paper on "Intra-abdominal Ovarian Hemorrhage." This was discussed by Drs. Mott Rawlings, John Hardy, Paul

Gallagher, Gerald Jordan, L. Green, and other members of the society.

Dr. John Murphy submitted a paper on "Varicose Ulcers and Their Treatment." This was discussed by Drs. James Vance, Erich Spier, Mott Rawlings, Paul Gallagher, Leighton Green, and E. K. Armistead.

Dr. Frank C. Goodwin was not there to read his paper.

Dr. George Turner made a suggestion that copies of the year's program be mailed to each member of the El Paso County Medical Society and to the officers of the William Beaumont Hospital.

Adjourned at 9:30 p. m.—(Reported by Dr. Robert Thompson and Dr. John Morrison).

J. D. Hamer
President

ARIZONA STATE ASSOCIATION DEPT. D. F. Harbridge
Secretary

THE PRESIDENT'S COLUMN

J. D. Hamer, M. D.

The Industrial Relations Committee for 1936 is composed of the following: President and chairman, Dr. J. D. Hamer, Phoenix; Secretary and member ex-officio, Dr. D. F. Harbridge, Phoenix; Dr. R. D. Kennedy, Globe; Dr. A. C. Carlson, Jerome; Dr. Meade Clyne, Tucson; Dr. E. C. Houle, Nogales, with Dr. W. W. Watkins, Phoenix, elected by the committee as secretary. The Industrial Relations Committee meets on the first Sunday of each month and physicians are urged to confer with the committee member of their respective districts in cases of mutual interest. The state industrial commission has chosen the members of the relations committee to serve as its Industrial Rating Board.

The Social Security Committee created by a resolution of the House of Delegates at the Nogales Annual Meeting is as follows: President and chairman Dr. J. D. Hamer, Phoenix; immediate past-president, Dr. C. R. K. Swetnam, Prescott, and president-elect, Dr. C. R. Swackhamer, Superior. This committee is empowered by the resolution to act for the association in all phases of work under the Social Security Act in the state. Physicians and surgeons should confer with this committee before actively participating in final social security plans.

The committee for the work for crippled children as well as for the blind, "will be selected on the basis of certification by or eligibility for certification by the American Boards of certification." The Association's Social Security Committee is endeavoring to learn the full import of this requirement and will pass the information on to all concerned as soon as it is definitely available.

REPORT OF THE INDUSTRIAL RELATIONS COMMITTEE OF THE ARIZONA STATE MEDICAL ASSOCIATION

C. R. K. SWETNAM
Prescott, Arizona

Two years ago the house of delegates created this committee to endeavor for a better understanding between the members of this association and the industrial commission of Arizona. The committee consists of the president of the association as chairman, and four other members appointed by him. The past year the following have served: Drs. A. C. Carlson, Jerome, Meade Clyne, Tucson, R. D. Kennedy, Globe, E. Payne Palmer, Phoenix, and myself from Prescott. In addition Dr. D. F. Harbridge, as secretary of the association, was recognized as an ex-officio member of the

committee, and Dr. W. Warner Watkins was unanimously chosen as secretary. The resolution does not provide manner of appointing this committee; it has been thought advisable to have different sections of the state represented, and different branches of the professions.

Twelve meetings were held during the year with 100 per cent attendance at nearly every meeting. This indicates that the committee considers its work worth while. There were also present at each of the meetings the following men, representing the industrial commission: Mr. Carl Holmes, Dr. Ralph F. Palmer, Mr. Don Babbitt, attorney, and Mr. C. Leo Gynn, and at several of the meetings one or both of the other commissioners.

At each meeting every doctor present was given an opportunity to present problems called to his attention by the physicians of his community. Frequent discussions resulted as to the best methods of handling industrial injuries, with the idea of bringing about a better understanding by the commissioners of the doctor's problems; also an effort was made to get the commissioners' ideas to pass on to our membership.

The commissioners were exceedingly cooperative and repeatedly stated that their object is to improve their rules and regulations so that cases may be handled with the most satisfaction to all concerned. Some of the rules and regulations are fixed by the legislature that created the industrial commission and others are subject to change by the commissioners.

In a number of cases reviewed by the committee, the doctors had sent in bills which to the commission seemed excessive. In some cases, after due consideration of all circumstances the committee supported the doctors and showed the commissioners why their apparent increase in cost was justified. In a percentage of cases the committee turned down claims believing that unjustified treatments were claimed.

In this connection, I would like to emphasize the necessity for making full detailed reports on every accident and if any change takes place in the patients after the first reports, make supplementary reports. Many of the differences of opinion between the commission and the doctors brought to our attention have been because this has not been done. Injuries reported as clean and which should have been discharged in a week or two have been prolonged and the doctors failed to explain

that infection developed. We have found a number of these cases that were easily adjusted when the doctors wrote explanatory letters.

**THE INDUSTRIAL RELATIONS COMMITTEE
AND THE MEDICAL RATING BOARD OF
THE ARIZONA STATE MEDICAL
ASSOCIATION**

W. WARNER WATKINS, M. D.
Phoenix, Arizona

(Presented before the 45th Annual Session of the Arizona State Medical Association, April 23-25, 1936).

The relationship between the industrial committee and the Medical Rating Board is not clearly understood by all members of the association.

The Industrial Relations Committee is appointed by the president of the medical association. Its function is to bring understanding and cordial relations between the industrial commission on the one hand and the medical profession and individual doctors on the other. The committee considers matters brought by the commission, by individual doctors, by county medical societies, or by the committee itself.

An outstanding example of a matter initiated by the committee itself was its action when first organized in July, 1934, when it sought and obtained from the commission a revision of the entire fee schedule. A good example of a matter brought by a county society was a resolution sent in by the Gila County Society, relative to the activities of wildcat insurance companies in writing inadequate industrial insurance resulting in leaving the doctors holding the sack. Matters brought by the commission or by individual doctors relate usually to disputes about fees, or to disagreements about the disability connection of certain illnesses.

The medical rating board arose out of the work of the Industrial Relations Committee, but the functions of the two groups are entirely distinct and different. When the relations committee first met, the commission brought before them matters involving diagnosis and rating of disabilities which they properly decided did not come within the scope of the work as laid down by the resolution creating the committee, whereupon the commission requested the same group of doctors to constitute a Medical Rating Board, meeting on a different day and at a different place and with entirely different duties. Their function is purely that of a medical and surgical consulting group, to examine patients and determine certain facts regarding the effects of their injuries—just how bad the injury was, whether the treatment could possibly be improved, whether the conditions are stationary, and if so how much permanent disability has been produced. They make their examinations without suggestions from the commission or any representative of the commission, and with neither medical referee nor other represen-

tative of the commission present. Their conclusions are rendered as a collective opinion.

It has been purely incidental that the relations committee and the rating board are nearly the same in personnel. During the first year one member of the rating board was not a member of the relations committee: Myself. During the second year the same situation existed as regards myself, and in addition, one member of the committee was not a member of the board: Dr. Carlson. The commission could, if it so desired, name a group on the rating board entirely distinct from the relations committee: Myself. During the second do so, preferring to accept the judgment of the association's president, since the same qualifications which will make a member of the committee efficient and valuable in that work, will also make him a valuable and efficient member of the rating board. Therefore, after the president of the association has scanned the whole state and selected five men, with the knowledge, experience and good judgment which will make them valuable on the relations committee, the commission can not do better than to use the same men on the rating board. Dr. Carlson, during his second year on the committee, thought best not to serve on the rating board. On the rating board, there was great need for a consulting radiologist and the commission asked me to serve, although I have not been a voting member of the committee.

The board has been using the offices of the medical referee, purely because of convenience. The referee does not participate in the examinations, discussions or decisions. There may be some objections, from the standpoint of policy, to this arrangement, but the advantages of ready reference to the records of injuries and their treatments, to the x-ray films and the use of the office equipment, offset the objections. In the original organization of the rating board, the clerical facilities of the medical referee's office were used; later when it seemed wiser to keep the work of the board independent and self-sufficient, the board elected a secretary from its own membership, and selected me.

The board has gradually developed a technic of examination not yet perfect, but much more efficient than in the beginning. They take one patient at a time, and a member of the group presents the record; corrections and additions are supplied by the patient, every effort being made to get a true chronological record of events. The patient is then examined by the group, advantage being taken of special abilities possessed by any of them; for example, during the past year, Dr. Swetnam has examined the ears, noses, throats, and teeth of all patients before the board. X-ray films on file are studied; additional x-ray examinations or other laboratory examinations, deemed advisable, are done and are usually ready for consideration the same day. If more prolonged investigation is required, or if examinations by

specialists not represented on the board are desired, the patient is referred for these and further consideration deferred a month or longer, if necessary.

When all facts have been gathered, the board gives careful consideration and renders a collective judgment.

Since July, 1934, the board has made 176 examinations, on 120 patients. Those coming before the board two or more times, mostly were patients in whom the conditions were not stationary; the board often deferred decisions and suggested certain lines of treatment and re-examinations.

The cases referred to the rating board obviously were difficult cases, otherwise there would be no need for seeking such group consultations.

There have been injuries as follows: 70 spine, 19 head, eight pelvis and hip, 15 upper extremity, 19 lower extremity, six chest, two hernia, one involving loss of testicle, one gunshot wound of thigh, one black spider bite, one urethra, one electric shock, two abdomen, one face involving loss of eye sight, one chronic lead, two of carbon monoxide and two sulphur fume poisoning, one hyperthyroidism, one ruptured spleen and one severe burn.

The case of lead, brass and sulphur fumes and carbon monoxide poisoning were probably the most difficult ones, requiring repeated observation and opinions from various specialists. One of the sulphur fumes cases appealed to the commission who awarded disability but were reversed by the supreme court who accepted the rating board's finding of no disability arising from the cause claimed.

In closing: In the name of the board, I appeal to the physicians treating injuries to make their reports of the initial treatments with great detail and care. The most important thing is the description of the original injury and the manner received. Five minutes spent in giving this report with exactness may save hours of time, thousands of dollars, and perhaps injustice to workman or employer. Five minutes time and 50 extra words at the outset may keep the case from going to the supreme court.

THE INDUSTRIAL RELATIONS COMMITTEE AND MEDICAL RATING BOARD; THEIR ORGANIZATION, FUNCTIONS AND VALUE

L. C. HOLMES

Arizona Industrial Commissioner
Phoenix, Arizona

(Presented before the 45th Annual Session of the Arizona State Medical Association, April 23 to 25, 1936.)

The Industrial Relations Committee and the Medical Rating Board are separate entities in function and yet their personnel during much of

the time, though unnecessarily so has been identical.

The Industrial Relations Committee originated in the 1934 meeting of the Arizona State Medical Association with the following resolution:

"Believing the medical care and physical restoration of workmen injured in the course of employment to be the essential, underlying principle of workmen's compensation, and that the physical and functional evaluation of temporary and permanent disabilities of injured workmen can be adequately determined only by members of the medical profession; and, further—believing that the responsibility for such medical care and restoration of injured workmen, together with the physical and functional evaluation of their injuries, rests squarely upon the shoulders of the medical profession of the state; and, further—believing that by means of an active and close co-operation of the State Medical Association with the Arizona Industrial Commission, the intents and purposes of workmen's compensation can be carried out more efficiently and more economically and more harmoniously; therefore, be it.

"Resolved by the Arizona State Medical Association that a permanent Industrial Relations Committee of five of its members be established; that said committee be known as the Industrial Relations Committee of the Arizona State Medical Association; that the president of the State Medical Association each year automatically becomes a member and chairman of this committee, and the other four members of said committee be appointed by the president of the State Medical Association within a period of thirty days following the adoption of this resolution, and that said members so appointed serve for a period of one year or until their successors have been appointed; that said committee be representative of the medical profession of the state, and be fully authorized to represent the membership of the State Medical Association in all questions and decisions relative to medical relations under workmen's compensation; that said committee be further authorized to form its own organization and regulations, and be further authorized to enter into any arrangements or agreements with the Industrial Commission of Arizona, which, in the judgment of said committee, may aid in carrying out its purposes; that said committee keep a record of its activities and make annual reports to the Arizona State Medical Association, and be it further

"Resolved that the Arizona State Medical Association, through its secretary, extend greetings to the Arizona Industrial Commission, enclosing a copy of this resolution, together with the names of the members of the committee so appointed, and further to advise the Industrial Commission of the desire of the physicians and surgeons of the state to co-operate with said commission insofar as their special knowledge and experience may be of value to the commission in administering Workmen's Compensation Law."

Conforming with this action, the president of your association appointed a Medical Relations Committee consisting of five. The commission arranged a meeting between the committee and the industrial commission in Phoenix early in June, 1934.

From then until now, monthly conferences have been held by the committee and commission usually represented by one or more commissioners

and by various associates. Your committee has been a great satisfaction; it keeps us abreast of our work. Many misunderstandings have been removed; many other vexing things could be smoothed out if your members disclosed their desires. Be assured that your committee is functioning as designed to the satisfaction of the industrial commission. Matter for consideration arises from individuals of the medical profession and from the commission. Many contentious subjects have been handled in a surprisingly efficient manner and we have thereby relearned an old truth, that most quarrels between fair people arise out of misunderstanding. In almost two years' operation, there has arisen only one instance where a difference of opinion between a physician and the commission could not be referred to the Medical Relations Committee with full consent that all would abide by its decision.

Before creation of the Medical Relations Committee, the commission had been referring difficult or contentious cases, or those wherein medical opinion seemed to be hopelessly divided, to a board of outstanding physicians and surgeons. The commission believed that this board's personnel should be representative of the medical profession in Arizona, that it should have general distribution and should include a variety of special talent, and that, still further it should be created so as to remove any possible charge that the commission exercised restraint over the board. We were troubled by the thought that for these men to leave their work and come to Phoenix would entail too great a sacrifice. The physicians constituting your committee were approached by the commission with the idea that each month they would stay an extra day in Phoenix and function as medical rating or advisory board. They consented to this and the commission believes that nothing but good has come from this arrangement, and hopes that it may continue.

The commission must see that all injured workmen coming within its jurisdiction are compensated for their injuries to the full benefits accorded them under the law, must secure premiums from employers to pay these injury claims, and must conserve insurance reserves; your contact with the commission is almost entirely within the field where injuries are handled and disabilities valuated. In industrial surgery you have a statutory associate in the industrial commission. The board is distantly related to the commission, but is not its child, since the commission accepted the appointees to the Medical Relations Committee as this board.

The board was told that it and the commission are working to make sure that the injured workman receives the full benefits accorded him under the law. There has been an entire absence of friction between the commission and the board. The commission will not confuse the fair judg-

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THE 1935 RECORD

Received from members	\$708,026.00
Received from interest	45,155.00
Received from profits securities sold	835.00
Total Income	\$754,016.00
Sick and accident claims paid	535,062.00
Saved and invested	116,090.00
Total used for benefits	\$651,142.00

Of the total income from all sources,

86.35% WAS USED FOR BENEFITS

Total expense less than \$2.25 per policy

ASSETS Jan. 1st, 1936 . . . \$1,348,578.00

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ment of the board by keeping before it concern concern over monetary costs.

The commission does not disregard the costs, but will not shirk a fair responsibility because of the cost. The board is asked to take the viewpoint that both it and the commission are working for the claimant's, state's and policy holders' interests, in order that the duties imposed by the law may be fairly discharged. The commission must see that the board has the correct history in every case and all the medical data obtainable from physicians previously in the case, that it has the proper background of the case and that it has all other facilities which may aid it in properly advising the commission. The commission has no desire to advise or hamper the board in its deliberations, nor does it sanction the appearance before it of attorneys for the claimant on the exertion of any other influence which will hamper the board in giving unbiased opinions. Nearly every case reaching the Medical Rating Board has opinions from the claimant's physician and others and will frequently include an opinion from the commission's medical adviser. All opinions, including that of the Medical Rating Board, are advisory only since the commission cannot legally delegate the power to make decisions. It is the commission's desire that the board's recommendations or advice be wholly independent of any other advice after taking into consideration all previous work done on the case and work inaugurated by the board. The commission has consistently refrained from being present at meetings of the board and has insisted that its medical adviser, head of the claims department and other associates on the commission refrain from participating in the board's work except to furnish such information and data as requested. The commission realizes that unanimous opinion from the board is desirable but it is not demanded or expected; unanimity though has been the rule. The board knows that the commission must render decisions, and if there be wide divergences in medical viewpoints, the commission must reconcile them in order to render a final decision. The principal services

rendered the commission is when the board realizes the difficulty of laymen's finding the truth amidst conflicting medical testimony and proceeds to reconcile (or interpret) the medical aspects of the case and advises the commission as to the correct viewpoint.

Physicians should keep in mind that the claimant has definite legal rights whereby he is entitled to protest decisions of the commission, seek a rehearing and cross-examine those who give the medical advice to the commission on which the award is based. Instances arise where claimants are dissatisfied with their awards, even in the face of almost unanimous medical opinion and insist on their legal rights. This is a matter wherein the commission has no discretion and must accord the individual his opportunities. It is mentioned only to illustrate once more that the practice of medicine in industrial injury cases involves the necessity on the part of the physician to play his part in the administration of the law.

Finally, permit this observation: Your new president may make changes in the personnel of the Industrial Relations Committee and consequently in the Medical Rating Board. In these bodies a doctor can do a lot of hard useful work and make many sacrifices. While a measure of continuity is desirable on the board, the introduction of new members serves a useful purpose by increasing the numbers of your profession who have had opportunity to come closer to some of the problems of industrial medicine.

The commission trusts that every member of the medical profession heretofore serving on the committee and board regards the experience as a pleasant one and we of the commission will feel honored if we are successful in so conducting ourselves that members of your profession continue to welcome an opportunity to work with us.

In closing I convey the regards of my fellow commissioners and associates to all members of the Arizona State Medical Association.



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HELPING THE DOCTOR IN HEALTH EDUCATION

Excerpts from Article by Dr. W. W. Bauer, A. M. A. Bulletin, April, 1936.

"There is a rising tide of sentiment in the medical profession that doctors must give more attention individually and as societies to educating the public in health.

"The Medical Profession, as a whole, has always been in the vanguard of health education. . . . The medical profession has always stood between the public and those fanatics who would, if permitted, enact legislation which would cripple scientific research and perhaps seriously interfere with the practice of medicine.

"The American Medical Association publishes the only authentic health magazine—Hygeia—of national circulation; the American Medical Association, through its state and county medical societies, participates in numerous radio health broadcasts in addition to its own which is broadcast through the courtesy of the National Broadcasting Company. The American Medical Association spends thousands of dollars yearly answering the questions from lay inquirers. The question is, how can the individual practicing physician put these forces to work among his own patients?

"Hygeia, the Health Magazine, was the answer, a crying need for a health magazine of national circulation, authentic in character, fearless in policy, and, perhaps most important of all, utterly scrupulous about the advertising which it accepted. After thirteen years it may truly be said that Hygeia has kept the lead which it has held.

"The practicing physician can find in Hygeia from month to month a great wealth of material which will help him interpret the medical profession to his patients. Many a misunderstanding arising out of verbal explanations could be saved if the physician, maintaining a file of HYGEIA in his library, would instruct his secretary or office nurse to find for a patient an article explaining points which have arisen in the mind of the patient.

"The American people at large do not identify the American Medical Association with its members. HYGEIA receives many letters which give plain evidence that the American Medical Association is regarded as a body separate and distinct from the practicing physicians in the community. The physician himself the county medical society, the state medical society, the American Medical Association and HYGEIA would all be strengthened if every doctor's patients recognized him as a member of all these societies."

NEWS ITEMS

Dr. and Mrs. Hal P. Rice of Clifton, Arizona, visited in Phoenix during the early part of May.

Drs. Fred R. Harper, W. R. Leverton, Redford A. Wilson, and J. B. Littlefield signified their intention of attending the American Medical Association convention in Kansas City.

Dr. W. Paul Holbrook, under the able tutelage of Dr. J. B. Van Horn, landed one big swordfish at Guaymas. He has pictures to prove it.

As a result of a resolution passed by the Pima County Medical Society, Tucson physicians will close their offices on Saturday afternoons during the summer months.



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The staff members of St. Mary's Hospital held their final meeting for the year Friday, May chairmanship of Dr. D. L. Mahoney included a chairmanship of Dr. D. L. Mahoney includes a talk on "Pain in the Back," by Dr. John C. Riggs, and one on "Collapse in the Treatment of Tuberculosis," by Dr. C. A. Thomas. After the program, election of officers was held.

Maj. Gen. A. M. Tuthill, M. D., state adjutant general gave an address at the banquet of the 12th annual convention of the Arizona Reserve Corp, May 9th.

Dr. Trevor G. Browne, recently appointed to the parks board of Phoenix, has more recently resigned.

Dr. Nelson D. Brayton of Miami, has been elected secretary-treasurer of the Lions club of that city. Their annual meeting will be held in Ferndale, Brayton's mountain home atop the Pinal mountains in June.

An International College of Surgeons has been founded in Geneva, Switzerland for the purpose of bringing together leading surgeons throughout the nations. The object is to throw these men together to permit an exchange of ideas that may elevate the standard of surgery everywhere and eliminate from the practice of surgery unqualified persons, and to disseminate new and valuable information from one part of the world to others. The hope is to encourage research in surgery and to do such other meritorious things that will advance not only the practice of surgery but the best interest of the countries of the world.

Arizona has been asked to supply two regents for the Association. Dr. E. Payne Palmer has been asked to become one of these. Announcement of the other will probably be made at an early date.

Dr. Henry Bailey attended the California state medical meeting at San Diego during the latter part of May. He reports that there were over 1100 physicians in attendance and that there were 75 out of state visitors; the California Medical Association has a membership of about 5000. The meeting was held this year at the San Diego Exposition, making it a special feature of the exposition.

Dr. Voge J. Jefferies is the recently appointed deputy county physician for the Buckeye district of Maricopa County.

Dr. R. F. Palmer visited Boulder City, Nevada, in the early part of June.

Dr. W. D. Gilmore, who has been located at Tombstone for the last 2 years, has been appointed tuberculosis consultant for the Arizona State Board of Health. We understand the board is to send out a car fitted up for study and instruction about tuberculosis.

Dr. and Mrs. E. J. Gungle of Morenci, Arizona announced in May the approaching marriage of their daughter Cecilia to Frank Julius Rietz, to be solemnized June 6th.

Dr. Jack B. Eason, of Tucson, has been transferred to Yuma where he will be in charge of the new health unit in Yuma county. Dr. Eason has been county health physician for Pima county and formerly was in private practice in Bisbee. His qualifications have been accepted by the United States Public Health Service.

The Santa Fe railroad company is building a new hospital in Winslow which is to be a one-story building of steel and concrete with a tile roof. It will contain a waiting room, doctor's office, examination room, surgical room, nurses' quarters, kitchen and two wards with three beds each.



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Dr. and Mrs. C. M. Cron of Miami recently visited Mrs. Cron's mother—in Phoenix—Mrs. J. J. Sullivan of North Second Avenue.

Dr. and Mrs. C. Lawrence von Pohle of Chandler have been entertaining Dr. von Pohle's brothers, Donald von Pohle of Union, Neb., and Dr. Vernon von Pohle of Keene, Texas.

Dr. E. Payne Palmer, Phoenix, had a scientific exhibit on fractures at the American Medical Association and took part daily in the demonstration of the proper methods of handling fractures.

Dr. Warner W. Watkins, Phoenix, gave a paper before the section of radiology at the meeting of the American Medical Association in Kansas City on "Bony Anomalies in Wrist and Foot (Lantern Demonstration)."

Dr. Preston Brown, Phoenix, presented a paper before the section of obstetrics and gynecology of the American Medical Association meeting in Kansas City upon the subject of "Diagnosis of Ectopic Pregnancy (Lantern Demonstration)." Dr. Erwin von Graff of Iowa, was co-author with Dr. Brown.

The following Arizonans attended the recent meeting of the A.M.A. Drs. Preston T. Brown, Jess D. Hamer, Joseph Bank, Leslie R. Kober, D. F. Harbridge, James R. Moore, Victor S. Randolph, Howell Randolph, E. Payne Palmer, D. Fournier, Fred Loe, Orville Harry Brown, and W. Warner Watkins all of Phoenix, C. G. Salsbury, Ganado, Marguerite Steele, Williams, Samuel H. Watson, Charles S. Kibler and Redford A. Wilson of Tucson, and Menno S. Gaide of Jerome.

The following Arizona women attended the Woman's Auxiliary to the American Medical Association at Kansas City: Mrs. R. J. Morehouse, Mrs. Dudley Fournier, Mrs. J. D. Hamer, Mrs. E. Payne Palmer and Mrs. W. Warner Watkins, of Phoenix; Mrs. Ann Gaide of Jerome, Mrs. Fred Loe and Mrs. Paul C. F. Vietzke of Fort Defiance, and Mrs. J. M. Meason of Chandler.

Dr. and Mrs. D. R. Gaskins are having an addition constructed to their residence at 355 East Catalina street, Phoenix, Arizona.

Dr. Hal W. Rice informs us that his future post office address will be Bisbee, Arizona. We learned through other sources that he is resigning from the post of chief surgeon at Clifton, Arizona.

Max Pinner, formerly of Tucson, gave a talk on the "Pathogenesis of Tuberculosis" at the American Medical Association meeting at Kansas City. Dr. Pinner is now located at Oneonta, New York.

Dr. R. J. Stroud of Tempe, Arizona, is summering in Europe.

The Arizona Public Health Association meeting was held in Tucson on April 21st and 22nd, at the Sant Rita Hotel, with 107 public health workers registering. Dr. A. N. Crain, president, presided. The chief speakers were: Dr. Fred T. Foard, regional consultant, U.S.P.H.S. whose paper was read by Dr. Geo. Hays; Miss Hiesler, regional public health nursing consultant, U.S.P.H.S.; Mr. H. E. Hendrix, superintendent of public instruction, Phoenix; and Dr. W. R. Leverton, Veterans' Bureau, Tucson. The Santa Rita Hotel was most generous with their arrangements.

Dr. and Mrs. F. C. Jordan opened their home for a supper party recently for the benefit of the Friendship club of the First Church of Christ of Phoenix. The object of the club is to provide a student loan fund.

Dr. F. C. Jordan, who has been president for the past year of the Orpheus club, presided as



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Camp typed supports are sold at reasonable prices by authorized Camp support dealers—department stores, corset shops, surgical supply houses and drug stores. These stores are staffed by trained fitters and maintain quite complete stocks of supports, so that most every patient can be fitted accurately without delay. This is all part of the Camp Professional Support Service.

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toastmaster at a banquet during May of the members of the Orpheus club.

Dr. A. N. Crain, director of the Maricopa County Public Health Unit, was recently complimented by Dr. C. E. Waller, Assistant Surgeon General of the United States Bureau of Public Health for having a well rounded program suited to the particular public health needs of the community.

Dr. George C. Truman, state superintendent of public health for Arizona, has announced that a new public health unit will be set up in Yuma county under funds provided by the Federal government.

Dr. George Thorngate of Phoenix, Arizona, is a member of the Little Theater board.

Dr. F. L. Reese, of Phoenix, took part in a melodrama at the Little Theater during May presented at a membership meeting.

Dr. Trevor G. Browne, Phoenix, Arizona, president of the Little Theater during the past year was elected a member of the board for the ensuing year.

BOOK REVIEWS

The Bewildered Patient, by Marian S. Newcomer, M. D.; Hale Cushman, and Flint, Publishers, Boston.

Dr. Marion Newcomer has written a book which any physician might be well proud to have written. On page 10 of the first chapter is stated the jist of the book: "Practice of medicine is more than treating illnesses; it means establishing in the minds of people sane points of view toward health. It means

teaching persons how to care for their elaborate machinery. The public needs to be told what the doctors are now able to do for them and that is what this book does." The author does it in a language that is easy to understand and there are few words which the ordinary layman will have to look up in a dictionary.

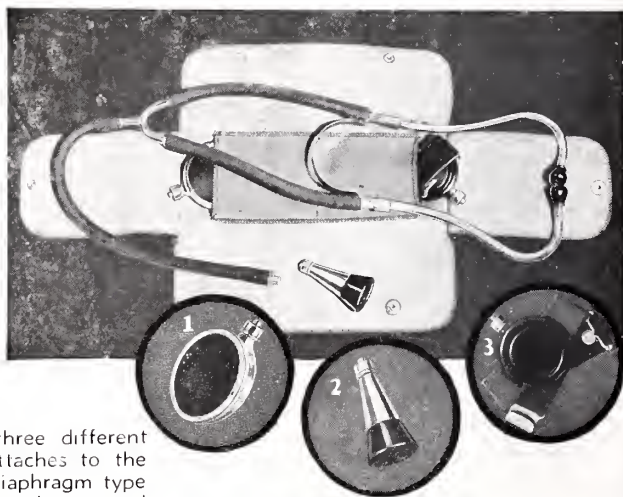
There are 325 pages divided into 18 chapters and an appendix. Chapter 2 is a bird's eye view of the development of medicine; chapter 3 deals with immunity explaining the methods used by the body in fighting disease; chapter 4 is entitled "Your Dynamic Self" and deals with metabolism and foods; chapter 5 is entitled "Tiny Things That Changed Man's World," and deals specifically with vitamins and deficiency diseases; chapter 6 is "Planning the Family Nutrition;" chapter 7 is "Creative Instincts and the Sex Cycle;" chapter 8 is entitled "Inklings of Your Intangible Self" and deals especially with psychology; other titles are "Choosing the Physician," "Physical Examination," "Consultation and Cooperation" "Medical Cost," "Home Care of the Sick," "Keeping Fit," "Emergencies," and "Alarming Accidents."

The language throughout flows smoothly. In one place we read "One of those people who never went out to meet life with a glad handclasp," and again "in other homes relatives are annoyingly solicitous." There is an occasional grammatical error which a good critic would have eliminated; for instance on page 234 "one nurse who, I feel sure has several times saved the life of a pneumonia patient" probably was meant the lives of pneumonia patients. On page 312 the author uses "prevent him from choking, or biting, or swallowing . . . where "prevent his choking, or biting, or swallowing" would have seemed preferable. On

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The new B-D Triple Change Stethoscope provides three different types of chest pieces, any one of which instantly attaches to the binaural unit. The chest pieces are: Ford type bell, diaphragm type metal and the smaller diaphragm type Bakelite with bracelet as used for blood pressure readings. The advantages are obvious. The bell type chest piece is most efficient for low pitched murmurs and breath sounds. The diaphragm type metal is best for high pitched murmurs, foetal heart sounds, etc. It has a decided advantage in pneumonia cases because it can easily be slipped down the patient's back in the palm of the hand. Diaphragm type Bakelite chest piece eliminates metallic resonance and is supplied with bracelet for blood pressure readings . . . A suede pouch carries the outfit with three chest pieces. The units may be purchased as needed. Prices are listed at the right.



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TOTAL \$5.25

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page 296 the statement is made "if possible have his chest lower than his feet" in resuscitating a person; I believe a more exact expression would have been "the head and shoulders lower than the chest," and it makes little difference as to the position of the feet. These minor errors, however, detract not at all from the worth of the book. This is a book which a physician may safely place in the hands of his patients and I believe that it will make better patients of those who read it.

CARDIOVASCULAR DISEASE, By J H. Schrup, M. D., Dubuque, Iowa.

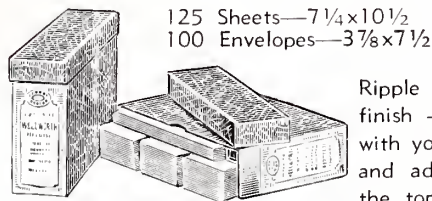
The doctor's thesis is that obstructions in the urinary tract produce toxin, through the damming back of the urine, which in turn causes cardiac disease. He stresses the importance of dilating the urinary tract constrictions.

This is a paper read before the regular meeting of the Dubuque County Medical Society of Dubuque, Iowa. It contains 20 pages and is well worth reading at the price of 12 cents.

"A STATE MEDICAL SOCIETY, or a county medical society, can supply helps to the practicing physician in health education. Unless the practicing physician seizes on these helps and puts them to practical use, they can never attain the fullest measure of success. A trustee of the American Medical Association has said that Association headquarters is like an ammunition factory. If this is true, then the ultimate use of the ammunition depends on the man on the firing line of public health, the practitioner of medicine, who is in contact with his patients."

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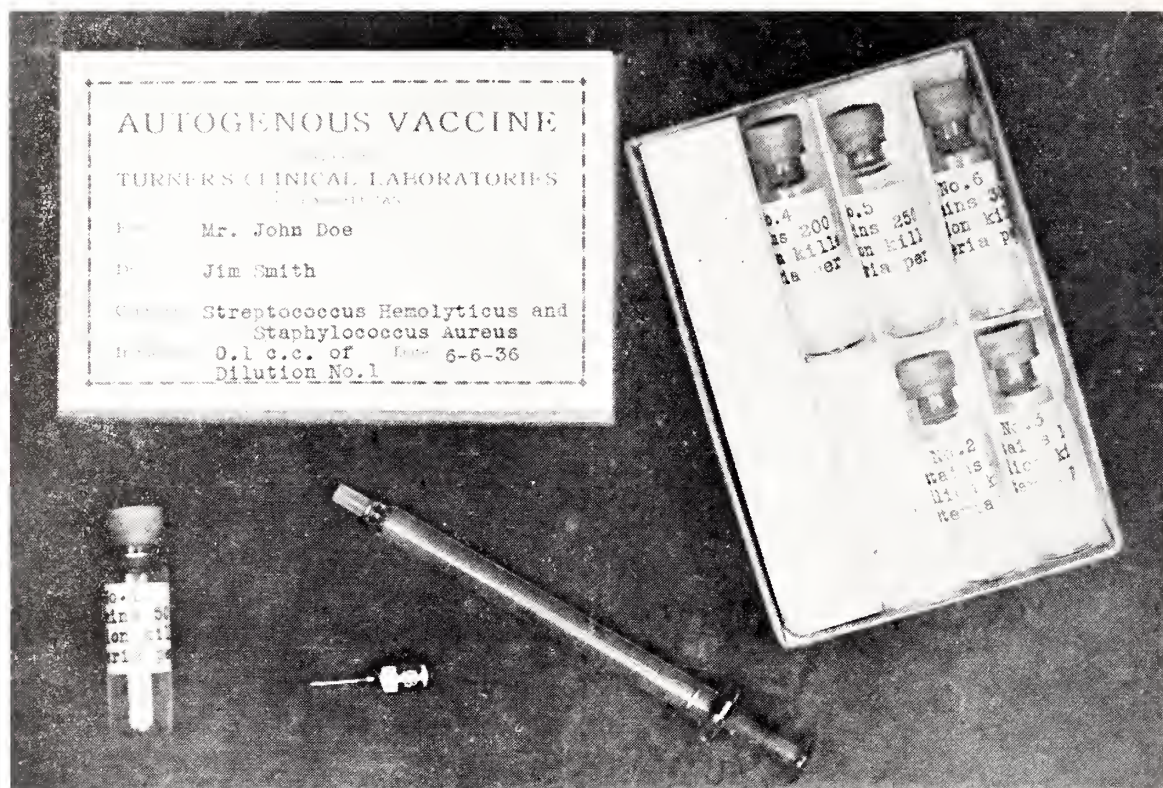
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That is an alarming figure. It makes the thoughtful person wonder, "What about my heart?" And the only person

who can answer that question for you is your doctor.

The answer most people get is one that takes a load off their minds—"There isn't anything wrong." But if something *should* be wrong, your greatest security lies in knowing about it promptly. For the heart has remarkable properties of recuperation. It responds to treatment, if started in time, better than most organs in the body. Even people with badly crippled hearts often live happy, active lives after they have been taught what precautions they should observe.

Today physicians know more about the ills of the heart and ways of the heart than ever before. They are better equipped than ever before to treat and

control heart disease—and to guard against it as well.

Shortness of breath—fluttering of the heart—numbness of the extremities—these are among the symptoms that suggest an *immediate* trip to the doctor's. But even without warning symptoms, many a wise man sees his doctor at regular intervals—far less "servicing" than he gives his car, yet obviously, infinitely more important.

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(REGISTERED U. S. PATENT OFFICE)

VOL. XX

JULY, 1936

No. 7

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ARIZONA STATE MEDICAL ASSOCIATION
EL PASO COUNTY (TEXAS) MEDICAL SOCIETY
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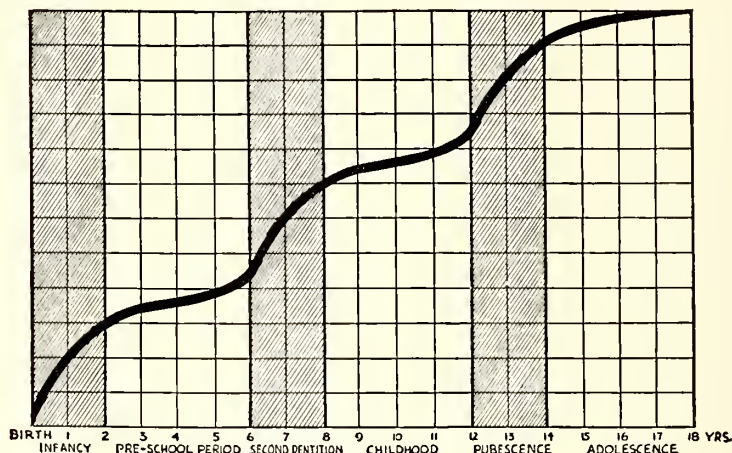
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DIARRHEA

*“the commonest ailment of infants
in the summer months”*

(HOLT AND McINTOSH: HOLT'S DISEASES OF INFANCY AND CHILDHOOD, 1933)

One of the outstanding features of DEXTRI-MALTOSE is that it is almost unanimously preferred as the carbohydrate in the management of infantile diarrhea.

In diarrhea, "The sugar is added gradually under conditions admit, some sugar other than milk sugar or cane sugar being used, preferably **dextrin** and **maltose**."—H. E. Small: *Diarrhoea in bottle-
fed infants*. J. Maine M. A. 12:152-158, Jan. 1932.

In diarrhea, "Carbohydrates, in the form of dextri-maltose, well cooked cereals or rice, usually can be handled without trouble."—B. B. Jones: A discussion of some of the commoner types of infantile diarrhea, and the principles of the diets used in their treatment. *Monthly*, 66: 411, 1915. dextri-maltose.

"The most desirable sugar is dextrin-maltose because of all the sugars maltose is least apt to be attacked by bacteria." — A. I. Blau: The use of protein milk

Concerning the treatment of diarrhea, "If the weight remains stationary, it is an indication that loss of substance is occurring through the stools mostly in the form of alkaline salts. To equalize this loss of substance, the diet must be increased, but in such a way as to avoid causing fermentation. This may be done by adding dextrin-maltose and preparations of protein to the food, increasing the calories until the infant is taking 160 calories per kilo. of body weight."—H. L. Kinnifor.

Nutritional disturbances, Arch. Pediat., 41:771 Nov., 1924.

Nov. 1924. ... Professor Finkels... of milk or lacte... of being able to... diarrhea... like protein milk... tion die like... dantage of being... d like Dextri... protein milk... ally bring the... a short time. W... carbohydrate ad... to the result... of collapse. Th... rown of Toron... added to Toron... practitioners... periods still u... st be emphasize... of the stools, c... void milk with... void collapse."... ants and child... 1933.

... of diarrhea... of lactose ma... percentage of su... where the dist... excess of ferme... 6-38, 1930;

In cases of malnutrition and indigestion. The appetite improves rapidly, and the stools soon become normal in appearance, if the sugars are intelligently prescribed. By this I refer to proper proportions of dextrin and maltose. While there is a tendency to looseness, I have used the preparation known as "dextrin-maltose" for "M. Ladd, Furl".
"AC... .. digested olive oil mixture"
July 1916.

"After the preliminary short period of starvation, protein milk should be used. . . . When the diarrhoea has been sufficiently checked, dextrin-maltose may be added and gradually increased until from 4 to 6 tablespoons are being used."
—W. L. Denny: *Acute nutritional disturbances of infancy*, Univ. West. Ontario M. J. 2:132-137, April, 1932.

Regarding the treatment of diarrhea, "In our experience, the most satisfactory carbohydrate for routine use is Mead's dextrimaltose No. 1." —F. R. Taylor: "Summer Complaints," *Southern Med. & Surg.*, pp. 555-559, August, 1927.

SERIOUSNESS OF DIARRHEA

There is a widespread opinion that, thanks to improved sanitation, infantile diarrhœa is no longer of serious aspect. But Holt and McIntosh declare that diarrhœa "is still a problem of the foremost importance, producing a number of deaths each year. . . ." Because dehydration is so often an insidious development even in mild cases, prompt and effective treatment is vital. Little states (Canad. Med. A. J. 13: 803, 1923), "There are cases on record where death has taken place within 24 hours of the time of onset of the first symptoms."

cause diarrhoea. If a
or be required it is better to
those, such as Mead's Nos.
those is only slightly in ex-
diminishing the possibi-
"—W. J. Pearson:
graduate Med.

"... I begin to add carbohydrates slowly, by replacing $\frac{1}{4}$ ounce Casec every two days with $\frac{1}{4}$ ounce of Dextri-Maltose, preferably Dextri-Maltose Number one. As a rule, this is tolerated. When one ounce of Dextri-Maltose is used, the Casec, of course, should be discontinued."—*J. H. Reed: The etiology and treatment of*

"When sugar causes diarrhoea one can change the form of it. Mead's Dextrimaltose in small doses is more quickly absorbed and so superior to castor [cane] sugar. Lactose is expensive and seems not to be better than castor sugar."—H. B. Glad.

"Milk-sugar, which has been so extensively used in the past, should never be used where there is any digestive disturbance. It is not as easily digested as either cane-sugar (granulated sugar) or dextri-maltose. The latter is the best of all sugars to use, especially if there is any tendency to looseness of the bowels."—A. Brown: *The Normal Child; Its Care and Feeding*, F. D. Goodchild, 1903, p. 129.

carbohydrate modifier of choice

In cases of diarrhea, "For the first day or so no sugar should be added to the milk. If the bowel movements improve carbohydrates may be added. This should be the one that is most easily assimilated, so dextro-maltose is the carbohydrate of choice."—*W. H. McCaskey: Summer diarrheas in infants and young children, J. M. A. Alabama* 1:278-282, Jan., 1932.

"If it is desired to feed a preparation with a high dextrin and relatively low maltose content, as Mead's dextrose maltose,"

...sugar to a baby, it is well to use maltose-dextrin preparation, as in this way the risk is less danger of bringing about sugar fermentation than if lactose were used."—L. W. H. *Practical Infant Feeding*. W. B. Saunders Co., Phila., 1922, p. 206.

[illegible]

Whole milk may be continued for several weeks when a gradual transition to a whole milk evaporated milk formula, which will supply about one and one-half to two ounces of whole milk every pound of body weight, is reached. This should finally have the addition of dextrin-maltose amounting to five to seven per cent. —R.
Strong: Summer diarrheas in infancy and early childhood, Arch. Pediat. 47:344-354, June, 1930.

diarrhea, "Dextri-maltose
 erbed, for they do not ferment
 and leave very little
 A. Blenkle; *Protein milks*
Pediat., 42:743-760, Nov.,

rest to partly lactose and partly maltose by dextri-maltose mixtures (Mead's Nos. 1 and 2). In our view cane sugar is less suitable than lactose, and if for any reason there is objection to the use of lactose, it is obtained by the addition of carbohydrates, while fat and casein are reduced. For this purpose trimaltose and flour are better than the ordinary sugars, since they are more slowly absorbed and have greater efficacy in their powers of controlling the flora in the large intestine."—W. J. Pearson, *The Flora in the Large Intestine, as Discussed by G. W. Hillyer*; *Recent Advances in Diseases of the Large Intestine*, 1920, W. B. Saunders Co., Phila., 1920, p. 102.

For cases of fermentative diarrhea, "... the ideal plan of treatment would be to give a food which is low in sugar (the food which that group of organisms thrive on) and high in protein. Calcium caseinate milk accomplishes this purpose. In our series of cases, we found it was necessary to use the casein calcium for from 5-8 days; we then stopped it and added for from 3-5 days; we formula —A. G. DeSanctis and L. J. Vander. The value of calcium caseinate milk in fermentative diarrhea, Arch. Pediatr.

Just as DEXTRI-MALTOSE is a carbohydrate modifier of choice, so is CASEC (calcium caseinate) an accepted protein modifier. Casec is of special value for (1) colic and loose green stools in breast-fed infants, (2) fermentative diarrhea in bottle-fed infants, (3) prematures, (4) marasmus, (5) celiac disease. MEAD JOHNSON & CO., EVANSVILLE, IND., U. S. A.

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VITAMINS IN CANNED FOODS

I. VITAMIN C

• The history of scurvy is as old as the history of exploration and conquest. Its ravages among early explorers and invaders are recorded in the oldest pages of history, due principally to the fact that during extended sea voyages or treks by land, dependence had necessarily been placed almost entirely on foods preserved by the crude methods of the day.

Scurvy was the first vitamin deficiency disease to be controlled by dietary management. In 1757, Lind recognized the fact that some substance in foods exerted a specific protective action against scurvy (1). As early as 1804, the daily lime juice ration became compulsory in the British Navy (2).

However, it remained for modern biochemical science to establish the chemical identity of this antiscorbutic factor. Vitamin C is now known to be identical with cevitamic acid (levo-ascorbic acid) and is as yet the only vitamin to be synthesized in the laboratory (3).

There would appear to be no valid reason why scurvy should ever constitute a serious threat to the health of the average American

infant or adult. Development of refrigerated transportation for raw foods and improvements in modern methods of food preservation, specifically canning methods, make available to the consumer during the entire year a large variety of foods possessed of valuable vitamin C contents. In addition, the modern trend towards education of the layman, in regard to the vitamin C requirements of both the infant and the adult, should also assist in complete eradication of infantile and adult scurvy from America.

Many canned foods are to be valued as contributors of vitamin C. Nutritional research has indicated that canned products such as the citrus fruits or citrus fruit juices (4), the more common fruits (5), and vegetables or vegetable juices, are important sources of the antiscorbutic factor (6). Modern canning procedures afford a good degree of protection to this labile vitamin, with the result that the canned food can be relied upon to supply amounts of vitamin C to the diet consistent with the amounts of the vitamin originally contained in the raw food from which it was prepared.

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(1) Vitamins: A Survey of Present Knowledge, Page 187. Medical Research Council, Special Report 187. 1932. His Majesty's Stationery Office, London.

(2) Vitamins in Theory and Practice, Page 86. L. J. Harris, 1935. Macmillan, New York.
(3) 1933 J. Chem. Soc. 136, 1419.

(4) 1930 J. Home Econ. 22, 588.
(5) 1935 Amer. Jour. Pub. Health, 25, 1340.
(6) 1933 Ind. Eng. Chem. 25, 682.

This is the fourteenth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



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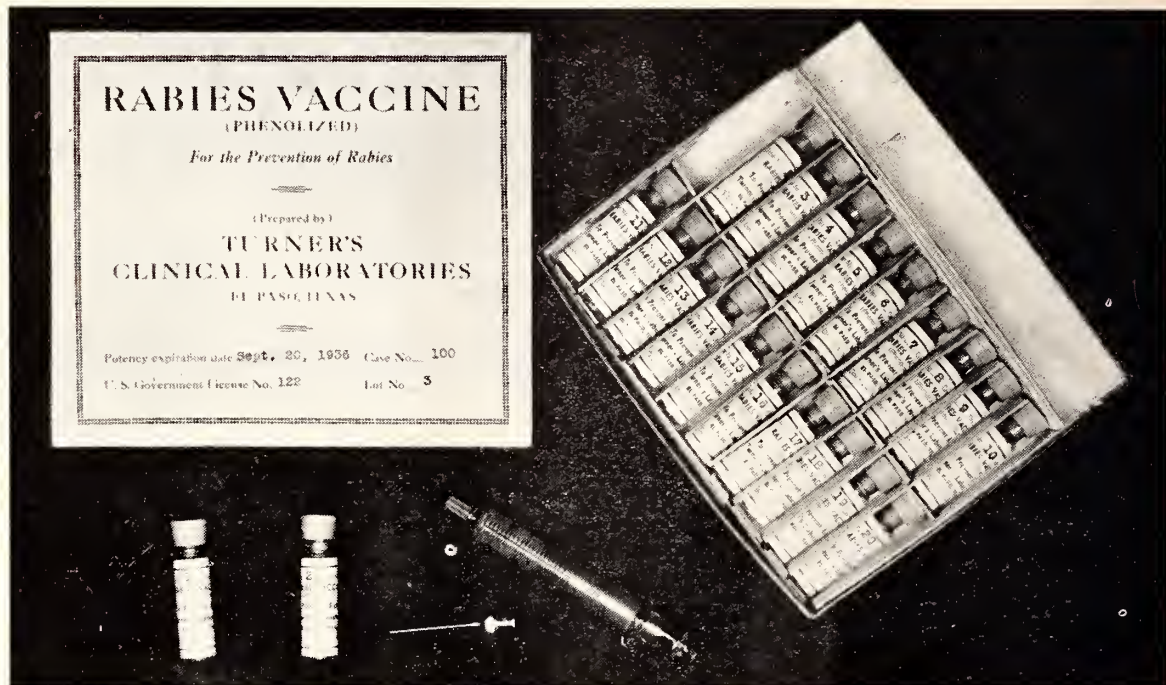


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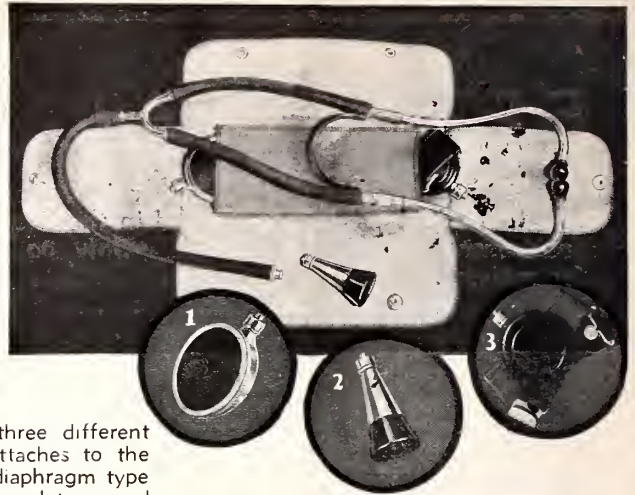
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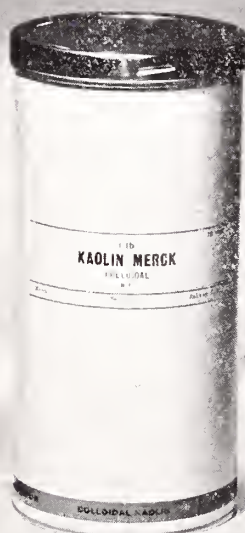
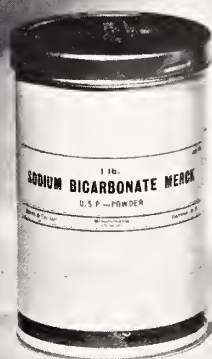
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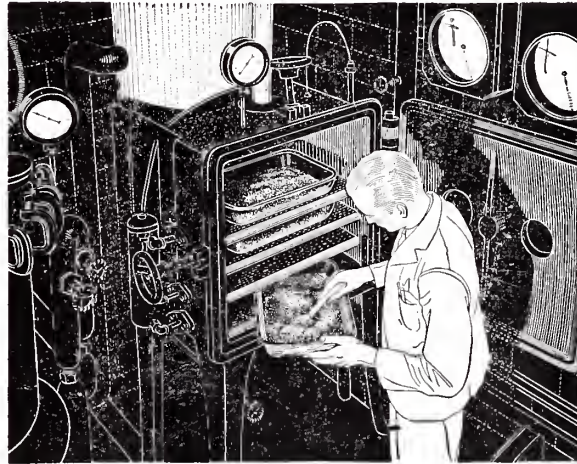
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VOL. XX

JULY, 1936

No. 7

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OUR ETHICS: PRESIDENT'S ADDRESS

M. B. CULPEPPER, M. D.
Carlsbad, N. M.

(Delivered before the New Mexico Medical Society, at its 54th Annual Meeting, at Carlsbad, N. M., May 6-8, 1936).

I am inducted into your highest office; the honor sincerely acknowledged personally, is, in my opinion, your recognition of the professional attainment of my immediate associates. I accept the high station with humility and pledge myself, with your assistance and support, to endeavor to advance our science in every possible manner.

I supplement the welcome already extended by our home city. Here the **Master Physician and Surgeon** has practised his art with skillful incisions upon mother Earth.

Holinshead in his "Chronicles" of the late 1500, said: "Great thanks, therefore, be given unto the physicians of our age and country, who not only doth yield and bring forth, but also to procure such as grow elsewhere, . . ." He spoke of herbs.

Rene Descartes in early 1600, commented: "The mind is so intimately dependent upon the condition and relation of the organs of the body, that if any means can ever be found to render men wiser and more ingenious than hitherto, I believe that it is in Medicine they must be sought for."

We salute our forebears of centuries ago, who dreamed not of the medicine of today, yet did prophesy that by medicine the ills of humanity would be alleviated.

The innovations in medicine, since we last met, are well nigh unbelievable and yet, we no longer marvel at each day's discoveries. The three factors which have wrought change will ever remain: Advanced physical comfort, med-

icine and its handmaid hygiene, and surgery. Medicine stands incomparably first in the mitigation of pain and suffering; to explore its virtues will be our continued aim.

Anticipation of this occasion has revived memories of the classroom of yesteryears. Who among us has forgotten the works attributed to Hippocrates, the Father of Medicine, in the earliest extant Greek medical writings? And you well remember his famous Oath. This interesting document shows that in his time physicians were organized into a corporation or guild, with regulations for the training of disciples, and with an esprit de corps and a professional ideal or ethics, which, with slight exceptions, can hardly yet be regarded as out of date.

One saying in the works of Hippocrates has achieved universal currency, though few who quote it today are aware that it originally referred to the art of the physician: "Life is short, and the Art long; the occasion fleeting; experience fallacious, and judgment difficult."

His doctrine, if such it may be called, said: "The physician must not only be prepared to do what is right himself, but also to make the patient, the attendants and externals cooperate."

We would emphasize this doctrine for in present day practice, mingled as it is with unprecedented commercialized activity, we may, through devotion to duty or other cause, forget the admonition uttered nearly 25 centuries in the past.

In conclusion, let us each rededicate himself to the practice of the age old **principles of ethics**, from which, perhaps we have too distantly wandered. Service to suffering mankind is our mission in life; unselfish service, as expected of us, is the better rendered when our every act co-ordinates with the "consequences from the qualities of men," or in a synonymous term, our ethics.

PROBLEMS OF THE CRYING INFANT

J. R. LEMMON, M.D., F.A.A.P.,
Amarillo, Texas

(Read before the 45th Annual Session of the Arizona State Medical Association, Nogales, Arizona, April 23 to 25, 1936).

The infant speaks his own language. The useful sound is the cry in its varied inflections. The doctor will do well to look and listen when a baby cries. The older clinician developed a keen sense of observation and it is this partly lost art that the pediatrician has to rely upon so often, especially with crying.

The varieties: In common every day infantum neonatorum language we have the high pitched "a-wa-anh, a-wa-anh", fading off into a kind of hoarse guttural stifle that defies description. Occasionally there is an interspersed cough which obstetricians recognize as mucus in the air passage. A few nights later (seldom in the day time) we hear the sharp protracted screech, high in pitch, which indicates pain or hunger, or both, and usually diagnosed by grandma as "colic."

There are also screams, screeches, squawks, squalls, snubs, and howls. In older children these cries are often accompanied by tantrums and "head butting" which adds to the discomfort of the families and physicians. These cries are more or less physiologic denoting pain, hunger, fear, and anger; often they are spoiled from lack of parental control. Spoiled babies early learn to cry for what they desire. When taken up crying stops. The remedy is simple.

Abnormal or pathologic conditions are frequently characterized by a certain type of cry. The observation of the cry, therefore, offers important means of diagnosis in infants. A healthy normal infant seldom cries. One hour per day of intermittent kicking, fretting and crying might be considered normal, serving as a vent to feelings and as exercise.

Persistent violent crying, rather fretful than sharp, is a cardinal sign of plain acute **hunger**. A simple complemental formula will usually solve the mystery and relieve the household. Weighing before and after breast feeding may give the clue to the need for complemental bottle feeding. Thirst may also cause this type of cry, especially in diarrhea.

Babies with chronic **underfeeding**, malnutrition, and nutritional anemia have a whining, peevish, fretful cry. Properly balanced diets of fats, carbohydrates, proteins, vitamins, minerals will usually give relief. Crying and fretting in this type is prone to occur about the fifth month. There is often an associated secondary anemia and the hemoglobin may be as low as 55 per cent. Administration of iron and ammonium citrate with cereals such as Mead's cereal or pabulum, rich in iron and mineral soon stops the crying. Cod liver oil and vitamin B are other valuable adjuncts.

I have seen numbers of children around 2 years of age, apparently healthy, who sleep poorly, demand midnight attention, and have a fretful peevish irritable whining. Management of this type requires two or three nights alone, iron and calcium and a proper diet regime. Frequently the whining children have been nursing a night bottle. This must be eliminated.

I have observed peevish crying associated with dirt eating. Iron and calcium plus a diet rich in minerals stops this.

Next to hunger as a cause of crying comes the typical cry of **colic**. Perhaps colic is a misnomer but it is expressive. A better word is gastroenterospasm or enteralgia. The cry is loud and continuous with flushing of face and often circumoral palor; the abdomen is distended and tense; the legs alternately and frequently are flexed and extended in kicking. The cry continues frantically with fists clenched and arms waving or flexed and drawn to the body. The feet and hands are often cold. Finally there is expulsion of gas or feces and the exhausted infant falls asleep. After the attack, the infant may be perfectly normal with no crying. This is the spastic, hypertonic infant and is typical of the old "three months colic" so expressively named by grandmothers.

In the **management of gastro-enterospasm** first eliminate hunger as a cause simultaneously giving one or two drops of a one to 1000 solution of atropine sulphate. One or two doses may produce flushing of the skin, nervousness hyperpyrexia, and distension singly or in combination. In such an event omit one or two doses then start with one drop. Seldom are two drops required. An enema will help to relieve the temporary distension. I have had

cases with enormous over dosage of atropin and all recovered quickly. The second remedy is **phenobarbital** (luminal), $\frac{1}{8}$ to $\frac{1}{4}$ grain every four to six hours until relief—then as necessary. In my experience acute phenobarbital overdosage does no permanent harm to the infant. Enemas of warm tap water or normal saline or glycerine suppositories may be used for distension. Mineral oil or petrolagar daily for the often present constipation is valuable. Most of these cases have calcium deficiency. I use the powdered calcium gluconate in about 15 grain doses b. i. d. Occasionally one may have to resort to intramuscular injections. Cod liver oil with viosterol and sunlight or ultra violet ray treatments may be helpful.

One should always consider **food allergy**. Milk, eggs, and wheat are frequent offenders. Skin tests often fail to give information. Most of these cases do poorly on any form of cow's milk for a while and are shifted from one formula to another in vain. Most cases will tolerate the food eventually after the use of atropin, phenobarbital, calcium gluconate, petrolagar, etc., and eliminating the allergic offenders.

Acute or chronic **intestinal indigestion** may cause intermittent crying and may be corrected by changing improper formulas. In both bottle and breast fed babies, too frequent feedings may cause crying. Frequent small stools, "spitting up" and gastro-intestinal distress often are associated. Allergy also may partially cause some of these symptoms. The remedy is four hours between feedings.

About the next most frequent crying is the acute frantic screaming of pain from **earache**. Physicians should examine the ear drums of all crying children. If in doubt, puncture an inflamed ear drum.

One should always suspect acute **pyelitis**, especially in female infants who fret and cry as if in pain. Routine urinalyses often disclose unsuspected pyelitis.

Pain or discomfort of less severe nature such as a **pricking pin, itching eczema, a wet diaper, uncomfortable position and overheating**, produce obstinate crying but usually neither piercing nor violent.

Violent paroxysmal crying, as in colic, may be from **passage of stone** or from **intussusception**. Acute intra-abdominal inflammation, as **acute appendicitis**, usually causes a suppressed

grunting cry, the effort to guard the intra-abdominal tension being plain. Rectal stenosis anal fissure, and chafing cause screams during defecation.

Diseases of the osseous system cause pain and crying, especially when the baby is handled. Osteomyelitis, scurvy, or syphilitic epiphysitis (Parrot's Disease) may exist. A hoarse or "snuffy" cry, associated with a "cold from birth" or snuffles, with or without pain or handling, always suggests congenital syphilis.

A weak, peevish or fretful cry, more or less constant, often accompanies marked debility, as in **marasmus, tuberculosis, or chronic meningitis**. The so-called "cerebral" or encephalic squeal or meningitis is characteristic. The cry of pneumonia or bronchitis is short and catchy; that of laryngitis or croup is hoarse, scarcely audible.

The cry of **intracranial hemorrhage** of the newborn should not be overlooked. This is a moan or "puppy dog whine," associated with failure to nurse properly with signs of intracranial pressure and cyanosis. Whole blood injections or spinal taps may be indicated in severe cases. Obstetricians should be more wary of this cry or moan and give early treatment.

Crying associated with **breath holding** due to temper is not uncommon and is usually during the first to third years of life. The child becomes cyanotic. The mother becomes frantic and gives in to the child's whims and this aggravates the condition. Frequently there is associated calcium deficiency; spasmophilia should be suspected. Calcium therapy, cod liver oil, and diet with proper discipline should be effective. Crying and breath holding and cyanosis in young infant should arouse suspicion of spasmophilia (tetany) or a persistent thymus gland. An x-ray of the thymus gland may be of help. In the event there is a persistent or enlarged thymus, irradiation offers a good prognosis.

I have tried to bring to mind the causes and management of crying. The pediatrician and general man will have constantly to unravel the problems of crying infants and it is hoped that the outline given will help in the solution of some of our daily office problems.

DR. C. V. BARLEY (Tucson, Ariz.): Dr. Lemmon has presented in a simple and sane manner a subject which is of great practical importance to both the general practitioner and pediatrician. It is

urethra drained of pus and the bathing of the penis in water as hot as can be borne constitute the treatment. Later, a mild injection such as a 3 to 5% solution of argyrol may be used.

Why alcohol exercises such a deleterious effect on gonococcus urethritis is not known. Violent exercise and driving motor cars are forbidden. Petting parties are taboo, as the congestive effect therefrom on the genitals is so marked. The patient must be impressed that he has a disease that can easily convert him into an invalid and that he must follow his physician's directions. He is not cured, or even non-infectious because the discharge disappears.

I have used the Corbus-Ferry filtrate intradermally on a small number of cases which I report.

A male, 18, received on Sep. 13, .05 c.c. with moderate reaction, and a week later, 0.15 c.c. with a similar reaction. The dose was increased 0 .05 c.c. weekly until 0.3 c.c. was given, and twice repeated. He was discharged Nov. 2nd, as cured.

A male, 22, had gonorrhea 1 year ago. On Dec. 13 he came with acute epididymitis, received filtrate weekly, and was discharged as well on Jan. 23rd.

A male, 17, having had a neisserian infection for a month, was given 9 doses of filtrate at weekly intervals. Apparently he was cured on Nov. 28; but he returned on Dec. 9 with a few gonococci in his smear; he was discharged as well on Dec. 19th. The extra length of time needed to cure this case was occasioned by his non-observance of orders.

A male, 26, with acute gonorrhea was given 12 doses at weekly intervals with apparent cure.

A male, 31, received 10 weekly doses of filtrate resulting in disappearance of the discharge and clear urine with many strings. Another month's treatment cleared up the strings.

A male, 24, contracted gonorrhea 2 months before coming for treatment. He had had a previous infection in 1930. He was given 7 doses of filtrate and was discharged 10 days later as cured.

A female, 28, married, complained of burning in lower abdomen, frequency and urgency and loss of weight (12 lbs.). Uterus was retroverted 3rd degree and very tender. She had

profuse cervical discharge, containing gonococci. She lived out of town and was referred to her family physician with directions for treatment. A month later, smears taken just after her period were negative.

A male, 25, contracted the infection 3 months ago and developed acute epididymitis 2 months later. Left epididymitis was swollen and tender with left seminal vesicle palpable and tender. He was given 6 doses of filtrate and did well until the development of a prostatic abscess 5 weeks after coming for treatment. The abscess broke into the urethra while I was massaging the prostate. He was discharged as cured after several more weekly injections.

That judgment must be exercised in the dosage of filtrate was proven to me by the following case: A male, 21, presented himself with an acute anterior urethritis on Dec. 30th. He was given 0.1 c.c. of filtrate which was double the initial dose I usually give, although it is the upper limit given in the literature. There was not much reaction and the next week he was given 0.2 c.c. which occasioned a 4 plus reaction at the site of the injection. A day later he appeared with an intense edema of the prepuce and a paraphimosis. The fluid was evacuated by puncture, but promptly refilled. Finally, an incision was made to relieve the paraphimosis. The next dose was cut to 0.15 c.c. with moderate reaction. Today (Jan. 27) there is practically no discharge and the paraphimosis is gradually receding.

From these few cases it will be seen that we have a powerful agent in the treatment of this disease, but not to be used in a haphazard manner. It certainly warrants further investigation.

ACUTE GASTRO-INTESTINAL ALLERGY MIMIC OF SURGICAL ABDOMEN

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My thesis is that rarely does an intra-abdominal condition present itself in which the diagnostician can afford to disregard allergy as a possibility; and the corollary of this is that many conditions which appear to be surgical

are in reality allergic in nature and do not require operation.

In the past 25 years the experimental phases and clinical study of allergy have advanced so that it is now time for allergy to be considered in the study of most patients. Almost every tissue in the human body may act as a shock organ. A much greater proportion of the population therefore, possesses the allergic constitution than formerly suspected. It seems that medical practitioners in general should be alert in considering the differential diagnosis of many conditions and accord allergy proper consideration.

We must cease to hold the attitude that the allergic patients belong only to those who style themselves allergists and we must become conscious that allergy is truly a fundamental phenomenon, playing as important a part in the production of illness as does infection, neoplastic growths, and endocrinopathies. True, the technique of certain steps in the diagnosis and management of the allergic patient requires special training, reagents and equipment. Likewise, the bacteriologist or pathologist only is equipped to study certain phases of infections or neoplastic diseases, yet infection and tumors are not excluded from the routine consideration in medical histories and examinations.

Failure to consider allergy in differential diagnosis is particularly common in the field of abdominal surgery. Most surgical conditions of the abdomen are simulated by allergic reactions and far too many abdomens are explored without consideration of allergy to account for the symptoms.

I first became interested in this subject as pathologist for a busy surgical hospital; it became more and more a mystery how innocent appearing appendices could cause symptoms sufficiently grave to precipitate patients to the operating table and surgeons into the abdomens. Many talks were had with the surgeons; the conclusion was forced that innocent appearing appendices do cause clinical appendicitis—but how? By what mechanism could one of these organs with practically no pathology produce symptoms indistinguishable from those in which there was definite evidence of inflammation? In search of the answer to this question, many sections of appen-

dices were studied microscopically. In numerous sections were two very definite findings, the significance of which I did not then appreciate.

The two observations were edema and eosinophilic infiltration. The significance of eosinophilia in allergic reactions in other tissues became established about this time and I explored that field for the explanation of the problem. It was at once apparent that allergy alone would not explain all the findings. Many appendices with an eosinophilic infiltration also presented definite evidence of infection. Gradually as my experience grew and I studied the histories of these patients, the conception of the inter-relationship of allergy and infection concentered. It is my present belief that either infection or an allergic reaction may initiate symptoms referable to the appendix or other tissues, and that the allergic reaction is more frequently the first. It is also my conviction that many appendices are removed before infection develops. I believe that proper attention to the allergic phase might bring relief to many patients without operations. Many patients are not relieved by surgery. Who is not familiar with the story of the over-operated patient? I list some of the symptoms that have been proven to have been definitely caused by allergic reactions to foods. This list is taken from Rowe. It has been repeatedly confirmed by my experience as well as that of others who are investigating the subject.

Canker sore, coated tongue, heavy breath, distention, belching, epigastric heaviness, sour stomach, burning, pyrosis, nausea, vomiting, diarrhea, mucous colitis, constipation, "gas in bowels," pruritis ani, pain and soreness in epigastrium, upper right quadrant, upper left quadrant, mid portion of the abdomen and lower quadrants, colonic soreness and ulcer type of pain.

General symptoms are toxicity, weakness, irritability, nervousness, mental dulness, and depression, general aching, fever, etc.

From this list it is apparent that certain abdominal symptoms might easily be interpreted as acute or chronic appendicitis, ulcer, cholecystitis, cholelithiasis, renal colic, or even in extreme cases, obstruction. Of 150 cases in whom these symptoms had appeared, 47 had had operations without permanent relief.

Statistics are sometimes misleading. Those of the surgeons rarely include adequate follow-up, while those of the allergists and internists have been without first hand information of the condition at the time of the operations. Both are without the benefit of knowing what would have been the outcome in each particular case by treatment or operation other than that employed. Probably my composite impression from the intensive study of suitable cases is more nearly correct than that derived from the study of long lists of statistical evidence.

Illustrative of my general conception of these cases is the following case report in brief.

A white female, age 36, 6 years ago without previous gastro-intestinal symptoms of moment, developed the classical symptoms of acute appendicitis. There was pain, tenderness and some rigidity in the right lower quadrant, nausea, vomiting, temperature of 101, and total white count of 17,000. She was taken to the hospital within the 12 hours after onset of the symptoms. She was seen by a surgeon and an internist who agreed on immediate operation. A senior surgeon of the group was called who was not convinced that the condition called for operation and it was decided to wait for a few more hours. Within 12 more hours all of the symptoms had disappeared and the patient was feeling well. During the following years there occurred occasional attacks of abdominal pain which gradually became more and more frequent and severe. These attacks were characterized by sudden onset, absence of nausea except infrequently, no elevation of temperature, normal white blood count, definite tenderness over the appendix, and slight rigidity. The pain required morphine for relief. There was generally no return of pain after the first hypodermic. Allergy as a cause of the condition was considered. Skin testing had been done and dietary control had not resulted in relief from the attacks.

The above summary is taken from a history actually compiled by a consultant after investigating the case as much as he desired to arrive at a conclusion. Operation was advised. What was not learned by the consultant during his anamnesis and what I consider to be important is as follows:

Family history of allergy (obtained with difficulty); frequency of urination with absolutely negative findings in the urinary tract after

exhaustive studies; the normal total white count was accompanied by an eosinophilia of from 6 to 15%; preceding all of the attacks, there was a variable period of intense vaginal pruritis; the skin tests were of a border line type occasionally seen in definite allergic persons; and dieting had been haphazard and insufficient for the desired purpose.

After a period of further investigation and realizing that allergy was probably an important factor in the case, operation was done because the attacks had become so frequent that extreme measures seemed warranted. The appendix was found slightly inflamed and slightly fibrosed. It was bound by adhesions to the tube and both were removed. There was an uneventful recovery. The attacks have continued as before, exactly similar in every detectable respect. The first post-operative attack of "appendicitis" in my mind confirmed the belief that there existed a marked food allergy. Efforts were redoubled to find the offending factors and these have with fair completeness now been identified. There has been no attack since the operation that was not preceded by the ingestion of one or more items that had given positive skin reactions and had also been doubly placed under suspicion because of their occurrence in the diet previous to attacks that had occurred before the operation. It had also been found that if given early adrenalin and ephedrine controlled the pain quite as effectively as had morphine.

Similar stories have been encountered in my experiences many times—not only in regard to appendicitis, but with gallbladder, ulcer and kidney conditions.

A diagnosis depends upon: A careful history, including the allergic history; and a careful physical examination and blood study, giving weight to those slight variations caused by allergy.

The treatment is: Symptomatic—adrenalin, ephedrine, and opiates; fundamental — diet along allergic lines; and surgery if necessary.

A few pertinent remarks concerning the management of allergic conditions in general and food allergies in particular are: The patient should be accorded the benefit of a painstaking history and general investigation. Skin test should be complete, covering the items in the diet and environment. Scratch tests should be done first and then intradermal tests on those

that were negative by the scratch method. The tests should be interpreted by one of sufficient experience to know the meaning of the wide variations in type and degree of reactions encountered. The materials used for testing should be potent. Skin tests should not be considered final, but should be accorded the value given to other diagnostic procedures. Following the tests, it is frequently necessary to experiment with the diet for long periods and perhaps it is necessary to repeat certain tests. Unless this attitude concerning allergic management is closely adhered to, one is certain to obtain many more failures than successes. We feel sure that the major portion of the discredit that allergy receives by physicians and laymen alike is a failure to properly observe the conditions outlined.

In many cases both allergy and infection play a part; allergy predisposes to infection and infection may injure a tissue so that allergy manifests itself. I realize that there are great difficulties in making correct diagnoses; many times one can not deny operation because of the risk involved in delay. I contend, however, that too many diagnoses of acute or chronic appendicitis are made, and that many patients are operated upon without regard to the sign-post pointing to allergy as the basis of the complaints.

Though allergy lives up to its name of "strange disease" it is not uncommon.

PRIMARY INFECTION, ALLERGY, AND REINFECTION IN TUBERCULOSIS OF CHILDREN

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(Presented to the 45th Annual Session of the Arizona State Medical Association, April 23-25, 1936.)

Primary infections with tubercle bacilli produce essentially the same changes in all ages and all races.

In children of today the common location of primary foci is in the thorax though it may be the abdomen, tonsil, cervical lymph nodes, and elsewhere. Inhaled tubercle bacilli lodge in the alveoli; in the first exposure they meet

with little resistance. The bacilli multiply and produce irritation and a pneumonic infiltration. The bacilli then spread along the lymphatics to the hilar nodes. This lymphangitis and lymphadenitis plus the primary focus make the primary complex. The primary focus may be large or too small to detect by ordinary clinical or roentgenographic methods—the lymphadenitis being the only reaction detectable and this only after the onset of allergy.

From the time the bacilli are inhaled two things happen: First, resistance, and second a sensitivity of the body to the bacilli and the tuberculoxins. With the allergy which requires from three to seven weeks from the time of the bacillary invasion, certain things are manifest. First and most marked are the changes in the lung and hilar nodes: The perifocal reaction is intense and may be extensive even involving an entire lobe producing the so-called epituberculosis; and the hilar nodes enlarge. The tuberculin reaction is now positive. There may be a fever of a few days' duration, and according to Wallgren' erythema nodosum may develop.

Physical signs may or may not be positive. The x-ray usually will show the enlarged nodes. The onset of the acute primary infection and of the allergy are often overlooked, perhaps merely being too mild to be recognized.

Clinically the child or infant may have fever with evidence of upper respiratory infection. Only a tuberculin test, a roentgenogram of the chest, or finding the tubercle bacilli in the gastric washings will identify the true condition.

The tuberculin test is obviously the simplest method of diagnosing tuberculous infection. There are a number of ways of making the test. The purified protein derivative—P. P. D.—is the most standardized. The Mantoux, consisting of dilutions of old tuberculin, is good. Both tests are made by intradermal injection. The von Pirquet test outfit may be used in the home and the tuberculin is fairly stable. It requires only a scratch for application. Recently I have used a tuberculin ointment as devised by Moro; it is the simplest and easiest of all to use. A small amount of the ointment is rubbed on the skin and the reaction is read in four or five days. In private practice this advantage is easily appreciated.

During acute stages of scarlet fever and measles, the tuberculin reaction may be negative in a previously allergic child, but may be a positive reaction two weeks later—the so-called delayed positive reaction.

With the diagnosis of the primary infection made, should treatment follow? During the acute stages yes; after this period no special therapy beyond good hygiene seems essential. First and most important is the prevention of further exposure to tubercle bacilli. This may mean taking the child from the home. Studies of Meyers indicate that many children are infected at school. The younger the child the more apt are we to find the source of infection in the home.

While fever exists the child should be kept in bed. Wallgren⁷ believes that rest during the acute primary infection may prevent tuberculous meningitis. He reports that in 166 autopsies of cases of tuberculous meningitis, 82.6 per cent had fresh primary tuberculosis. He studied 60 cases of tuberculous meningitis in which the dates of the infections or the first manifestations of primary tuberculosis were known. In two-thirds of the cases the meningitis developed in the first and second months after the onset of allergy—in most cases about six weeks.

Stewart⁸ adds that tuberculous meningitis, miliary tuberculosis and tuberculous pleuritis develop in some children shortly after their first infection with tubercle bacilli. He adds a fourth danger is that virulent tubercle bacilli from multiple foci may give rise to superinfection as of the bones, serous membranes and lungs.

In spite of these dangers, most children weather first infections, with comparatively little trouble—many going unrecognized. Meyers states that differences are not apparent between the treated and the untreated cases. Though opinions differ neither Stewart nor Meyers holds that successfully weathered first infections create immunity against active disease later in life. Stewart, in a study of 11,369 children, of which 4,031 had positive reactions at the beginning of the study, found 52 cases of phthisis developing in the tuberculin positive group and seven in the group originally negative. He concludes that phthisis develops exclusively in tuberculin-sensitive persons.

Meyers¹ states that 10 per cent of all children with positive tuberculin reactions will develop the adult form of the disease between the ages of 10 and 21. The lesson is that after the age of 10 all such children should be x-rayed annually or oftener.

At any rate those who believe that successfully weathered first infections create immunity to adult phthisis will admit it is a dangerous form of immunization. B. G. G. vaccination offers such conflicting reports that for private practice it is not yet worthy of trial.

Opinion is divided on the healing of the primary infections with final disappearance of the allergy. Meyers and Harrington express the view that tubercle bacilli may live in the center of the foci indefinitely and that once the tissues are allergic they remain so. As children who have reacted to tuberculin tests do get so they do not respond, it is thought that many children become tuberculin-negative. Kraus⁹ states that allergic response may not be visible in the skin but may be present in the tissues surrounding the primary foci. Paritzky¹⁰ studied 80 children who had positive tuberculin reactions that later became negative; 21 of these he followed from the negative stage through the positive and back to negative—the cycle averaging nearly three years. I have followed 86 children in a closed school, except for the summer months, through three years of tuberculin testing. Originally there were 42 positives; 13 have since become negative, and five negatives tuberculin sensitive. Of particular interest were two children from a home harboring open tuberculosis; one was negative and the other positive at the first test, yet in two years they reversed.

Tuberculin sensitivity may disappear, so far as tests may determine; but I repeat a child once having a positive test should be periodically x-rayed. While phthisis is relatively rare below the age of 10, it occurs and should be treated as vigorously as in the adult.

Meyers believes that children of all races respond to the first infections equally well and that in Negro, Mexican and Indian children with destructive lesions due consideration has not been given to the reinfection aspect. My present impression is that Mexican children suffer more severe forms of the primary infections than do white children.

Primary tuberculous infections in children are too often overlooked because not thought of or too mild. Positive tuberculin tests reliably indicate systemic sensitiveness to tuberculin which in turn means tuberculous infection.

Recoveries from primary infections do not mean that reactivations or reinfections may not subsequently develop, especially if the children are kept with "open" cases.

Children once responding positively to Moro or other tuberculin tests should be frequently x-rayed even though subsequent tuberculin tests are negative as 10 per cent develop tuberculosis before they reach 21 years of age.

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THE SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS

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(Presented to the annual session of the Arizona State Medical Association, April 23, 1936.)

Pulmonary tuberculosis is a surgical disease from the time the diagnosis is made. Patients with pulmonary tuberculosis are as much entitled to surgery as are patients with acute appendicitis. Many good surgeons, however, and many more internists are still classifying tuberculosis into surgical (bone, joint and kidney lesions) and pulmonary disease. The day has passed when surgery is radical treatment in

appendicitis. The day has also passed when surgery is radical treatment in pulmonary tuberculosis. The surgical treatment of pulmonary tuberculosis is the greatest advance in the treatment of this disease since the sanatorium or bed rest regime was established almost 50 years ago.

The treatment of pulmonary tuberculosis is no longer a one-man job; it requires the combined judgment and skill of a well-rounded staff of at least one or two internists and surgeons trained in the use of all collapse measures, an eye, ear, nose and throat man, a gastro-enterologist, and radiological and clinical laboratories. At the Southern Pacific Sanatorium of 100 bed capacity in Tucson, we have such a staff, and we carry from 80-90 per cent of all cases under some form of collapse therapy at all times. The only patients not under some form of collapse are the new arrivals or those who are considered entirely hopeless.

Progress in collapse therapy has been more rapid than in any other branch of surgery or medicine. The American Medical Association last year made a survey of 502 tuberculosis institutions in the United States, with a capacity of 74,083 beds, and reported astounding progress in collapse therapy in these institutions. During the year 1934, the aggregate of pneumothorax refills were 561,567; initial pneumothorax administrations were in 16,401 cases; phrenic nerve operations were done in 7,695 cases; thoracoplasties were done in 2,935 cases; internal pneumolysis was done in 929 cases and oleothorax administrations amounted to 2,076. They also report that all new sanatoriums are adding surgical units and arranging their staffs for surgical measures. So widespread and universally accepted has been the surgical program throughout the world that I quote from an article in December, 1935 **THORACIC SURGERY** by M. Harriston Davies of London:

"It is only a comparatively few years ago that the surgical treatment of pulmonary tuberculosis was still regarded as wholly impracticable except by a very few, farsighted enthusiasts. Since then such enormous advances have been made that it is only a very small arteriosclerotic minority that refuses to recognize them."

While collapse therapy is the only hope in a large percentage of advanced cases, and offers even greater chances of recovery to the moderately advanced patients, the fact that its most effectiveness is in the earliest lesions, seems to

have been overlooked by many of the pioneers in this field. That no other disease is permitted to extend its ravages before applying effective treatment seems to have had no weight. Many men who grasped eagerly collapse therapy in advanced cases were reluctant until recently to apply these effective measures in early cases.

The intelligent application of surgical measures in the earliest possible stages of all cases of this disease would soon render obsolete the operations of thoracoplasty, extrapleural pneumonolysis and such other procedures as are indicated in far advanced cases. The need for thoracoplasty in any individual's case, is positive evidence of past mistakes. Most men who devote themselves to the treatment of pulmonary tuberculosis have come to use at least some of the collapse methods; however, there are a few recalcitrants who have refused the light and should possibly be grouped among the arteriosclerotics of Davis. These, however, are not in sufficient numbers to retard the procession; they only sufficiently resist to make the progressive ones more conservative, and progress more sure. There are 10 different proven procedures in the surgical treatment of pulmonary tuberculosis:

Sanatorium regime, bronchoscopy, pneumothorax, oleothorax, phrenic interruption, temporary or permanent scaleniotomy, internal pneumonolysis open or closed (Jacobeus)—extrapleural pneumonolysis, multiple intercostal neurectomy—temporary or permanent—and thoracoplasty—partial or complete.

The collapse or surgical program in pulmonary tuberculosis contemplates the use of these different procedures in suitable cases according to the pathology and the condition of the patient. They are used singly, in combination and successively. Treatment is started in each case whether early or late with the one idea of arresting the diseased process at the earliest possible moment and to render the patient sputum and bacilli free. Judgment dictates that preference be given to the controllable procedure which offers a reasonable hope of cure—the case in early limited invasions, unilateral or bilateral.

Judgment and experience dictate that no time should be wasted after procedure fails to produce results. It promptly should be supplemented with another procedure or

withdrawn at once, and a different procedure offering a greater hope of being effective instituted. Much valuable time is wasted and many lives sacrificed by depending on an ineffective or partially effective measure when a completely effective measure is available and suitable. Contrary to the old teaching, time is really the essence of success in treating this disease. The application of these ideas calls for constant and intelligent team work in each patient from the time he comes under observation.

Nothing short of a complete program using the different procedures according to the indications in each case will bring the maximum results in all cases. Individual lesions and their distribution determine which one or combinations of procedures should be used. Bilateral lesions are not contra-indications for surgical treatment but only make it more imperative.

No indications for nor description of the technique of the minor procedures is undertaken in this paper. These are fully dealt with in text books and current literature. Since thoracoplasty in its modern aspects has not appeared in the text books it will be dealt with briefly.

Thoracoplasty: The original or German conception was a massive collapse of one hemithorax at one operation. The attending 50 per cent mortality was prohibitive even though some of the surviving patients were cured. Notwithstanding this high mortality, the idea was not abandoned, but rapid succession of changes ensued with two ideas in mind: Reduction of mortality and making the operation more effective. Instead of a 50 per cent mortality with a few cases cured, the procedure has been so perfected that today in the best clinics of the United States, it carries as high as 85 per cent cures and a mortality no greater than have other major surgical procedures.

As late as three years ago, these figures were not considered possible. The changes and modifications of the original operation, which have brought about these results are too numerous to mention, but a few of the more important steps will be enumerated with short description. As we look in retrospect on the criteria of scarcely three years ago, the improvements up until today have been truly dramatic.

The operation as originally planned was from

below up—that is commencing at the 11th rib and removing short sections of all ribs including the first at one operation. The location and extent of pathology was disregarded. The operation is now done from above downward and adapted to the pathology.

The present incision, devised by Alexander, starts at the top, as did the paravertebral incision, and swings around the scapula to the posterior axillary line or farther in heavy persons. The scapula is raised by cutting the upper digitations of the serratus-magnus muscle exposing all the ribs from the 1st to 7th. This incision permits removal of long sections of ribs, thus making the operation effective in a large percentage of cases including those with giant cavities.

The number of stages was increased to two, and later, the multiple stage procedure of Hedblom was adopted.

More wisdom in the selection of cases added greatly to the reduction of mortality and is still one of the intriguing problems not entirely solved. It has been proven, however, that patients with productive lesions lend themselves best, and that acute, widespread, exudative lesions are a specific contra-indication to thoracoplasty. It has also been learned that no patient should be operated upon until he has definite resistance to the infection.

The operation is adapted to the pathology in each individual case; that is, in apical lesions a partial thoracoplasty is done, collapsing only the apex, conserving all good lung possible. This, only a short time ago, would have been considered the rankest heresy.

Removal of all of the 1st rib, including its costal cartilage, all of the 2nd and 3rd ribs, including their transverse processes, costal cartilages and a portion of the sternum, if necessary, make it possible to close the largest apical cavities which by the older method, could not have been closed. These ribs are removed by the technique of Alexander—essentially as follows: Through the posterior incision, all of the first rib and long sections of 2nd, and one-half of the 3rd ribs, with their transverse processes are removed at the 1st stage. Later, after the chest wall has stabilized (two weeks or better still, three or four weeks), the second stage is done, removing another section of the remaining portion of the 3rd rib and long

sections of 4th and 5th ribs and their transverse processes. Subsequently, an anterio-lateral operation is done at which the 1st costal cartilage and the remaining portions of the 2nd and 3rd ribs with their costal cartilages, are removed; in this way the mortality is kept low without reducing the effectiveness of the procedure.

The painting of the periosteal surfaces with 10 per cent formalin to retard regeneration of bone is another decided advance. More time between stages of operation is thus possible. This has been no small factor in reducing the mortality. Formerly without the use of formalin on the periosteal surfaces, it was necessary to do the stages in rapid succession, concluding the whole series of operations in three to four weeks.

If the whole series was not completed before regeneration of bone, the best collapse was not obtained. With the use of formalin, 30, 60 or even 90 days delay is permissible, and in many cases advisable.

Operating time, which is obviously important, has been greatly reduced; limited operation and team work are the two factors.

In partial thoracoplasty, where it is necessary to remove sections of only four, five or six ribs, resection of a portion of the lower angle of the scapula, as brought out by Holman, to make it fit snugly onto the decostalized pleura has been found available. The seating of the scapula in this manner aids materially the collapse, limits paradoxical respiration, and prevents painful friction between its lower angle and the 6th and 7th ribs.

Pre-operative treatment as regards emptying of cavities and bronchi of sputum before anesthesia has proven of great value in preventing bronchogenic spread.

Post-operative treatment, which is most important, has lost many of its horrors since the modern operation has been adopted. Blood transfusions and oxygen tents are seldom needed. Morphine without atropine is administered freely. It is important to have the patient cough at regular intervals for the first 48 hours and to raise the same amount of sputum daily as before operation. Five per cent sodium chloride solution 300-500 c.c. followed by 3000 c.c. or less of normal saline or Hartman's solution intravenously have been found to lessen

nausea and vomiting and to prevent abdominal distention. Since we have used these solutions, and discontinued the use of glucose, we have had no serious case of ileus, and convalescence was usually comfortable and uneventful.

SUMMARY

Pulmonary tuberculosis is a surgical disease best treated by collapse measures.

Early diagnosis and early collapse will reduce morbidity and mortality to a minimum.

The best results in collapse therapy are obtained through cooperation of internist and surgeon—in other words, group practice.

Thoracoplasty has undergone many and rapid changes during the last five years, which have reduced the mortality to a par with other major surgical procedures, and effects cures in 85 per cent of the operated cases.

DIAGNOSIS OF EARLY TUBERCULOSIS

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(Presented before the 45th Annual Session of the Arizona State Medical Association, April 23-25, 1936.)

Knowledge of the diagnostic points of pulmonary tuberculosis is so widespread that it seems almost a waste of time to reiterate them. Yet well-known paths are sometimes a little carelessly and thoughtlessly trod. In a disease so destructive of health and life and wasteful of time and money as is tuberculosis reviewing the early signs which may point to simple and effective and almost preventive treatment may be worth while.

I stress the urgency of careful, complete examinations, reexaminations and continued observation of individuals who present even one of numerous evidences of tuberculosis.

The first fact of importance is a history of contact. We have recognized that more fully in children than in adults; but it is important also in adults. We often see tuberculous patients who have had no known contact. But that patient who has had definite contact should be regarded with more suspicion and should be more carefully observed than his symptoms may at first seem to warrant.

The history is important too as regards loss of vigor, loss of interest or failure to carry out

accustomed activities, unaccustomed tiring, loss of weight, or inability to regain weight after stress or acute illness, loss of appetite or enjoyment of life. These things go with the insidious onset of tuberculosis. Later comes afternoon fever usually in the insidious case. In the more acute onset fever and night sweats may come first.

More specific symptoms pointing to tuberculosis are pain in the chest and cough. Transient pains may prove to be of no importance but the physician should at least determine a cause for the pain whether due to overexertion, costal strain, a chronic or acute bronchial and accessory pulmonary infection, true neuralgia due to focal infection or a more serious condition such as heart disease or malignancy. Possibly the older practitioners were more astute than we in ferreting out the cause of pain. True fibrinous pleurisy always means definite infection in the chest and most often tuberculosis if pneumonia is ruled out.

Cough may come from a variety of causes but if the heart is excluded it is usually from the larynx, bronchi or lungs. I have seen one actual case only of severe paroxysmal night cough in an old man whose uvula, elongated and edematous, actually rested, when relaxed, on the vocal cords. Shortening the uvula relieved the cough, but this cause must be very rare. Cough coming first from the larynx is also comparatively rare except in acute laryngitis which quickly subsides. Primary cough caused by tuberculosis of the larynx also is rare. Polypi and other growths in the larynx are uncommon. I believe also that cough caused by dropping of secretions into the nasopharynx from the sinuses is uncommon and that no cough should be ascribed to this without careful demonstration of its existence.

Cough from an acute bronchitis is more common, but if the physician assigns this cause for a patient's cough, reexamination must be done at least monthly for three months to be sure there is not some underlying more serious etiology.

Cough due to hay fever is not uncommon but should disappear quickly under appropriate therapy.

Chronic bronchitis and bronchiectasis with or without asthma commonly cause cough. These conditions can be readily differentiated

from tuberculosis by lipiodol injections and x-ray film. Occasionally tuberculosis is diagnosed when examination would show bronchiectasis and of course more commonly bronchitis has been diagnosed when the actual condition was tuberculosis.

The raising of sputum always means intrathoracic trouble — bronchitis, bronchiectasis, abscess, tuberculosis, other rare infection or malignancy. I do not believe that patients raise sputum from the trachea or bronchi because of droppings from the sinuses into the nasopharynx.

Unaccustomed dyspnea on exertion may rarely be a first sign of tuberculosis.

Blood spitting is one symptom that should put a physician definitely on guard. Pyorrhea as a cause of hemoptysis is certainly most uncommon. Varices in the upper air passages, pharynx or esophagus are also rare. On the other hand hemoptysis is not uncommon in bronchiectasis. However, this is usually a chronic disease and therefore should not be confused with tuberculosis. Certainly hemoptysis occurs most commonly in tuberculosis, and tuberculosis should be carefully excluded before diagnosing any other cause for it.

A symptom complex which not infrequently has first brought a tuberculosis patient to the physician is that of so-called "flu" or influenza; occasionally also a diagnosis of pneumonia is first made in this type of patient who some weeks or months or perhaps a year or more later proves to have tuberculosis. Certainly not all so-called "flu" is tuberculosis but it is also certain that these cases must be observed and reexamined at intervals after their recovery from so-called "flu" if tuberculosis is to be ruled out or discovered at an early stage.

Pleural effusion is another condition that should not be lightly passed over. When no other etiology is present a large percentage will be due to obscure tuberculosis. Frequently it is wise after aspiration of fluid to cause temporary pneumothorax until the lung can be thoroughly x-rayed and tuberculosis with cavity ruled out. When no tuberculosis can be diagnosed, it still may be present. Recently a young patient of mine with effusion and no demonstrated lung trouble but poor general condition was in bed three months, made marked improvement and was about to be released

when he developed fatal tuberculous meningitis.

Spontaneous pneumothorax rarely is a first sign of tuberculosis. Some cases of spontaneous pneumothorax probably are not tuberculous in origin, but all must be carefully observed and the patients reexamined repeatedly.

Some acute fevers thought at first to be due to other conditions prove to be tuberculous.

The average case however with which this paper is concerned has only vague symptoms—cough, pain, loss of weight, malaise, and so on.

Examination should be general and thorough. For the chest it includes inspection, palpation, percussion and auscultation before and after cough. Listening to the chest after cough is of most importance in eliciting early disease. Fluoroscopy is of value.

Most important though in this early case is the x-ray film, preferably stereoscopic. I believe that endeavoring to save a patient's money by not having an x-ray film made is often in the end a waste both of his time and money and often his health.

The blood examination is next in order. Anemia should be discovered if present. The white blood count is of value usually chiefly for the differential count. A high monocyte count and a relatively low lymphocyte count is somewhat indicative of tuberculous activity. The sedimentation rate if rapid will support other positive findings of tuberculosis. Urinalyses and sputum examinations should be made.

Sputum may need to be examined repeatedly and possibly by culture and guinea pig inoculation before declared negative. Even repeated negative sputum tests do not disprove tuberculosis.

If a positive diagnosis cannot be made but some of the findings or symptoms point toward tuberculosis, the patient should return for re-examination at intervals of a few weeks.

It may be important to make a stool examination, agglutination for malta fever and other tests to prove that the condition is not something else than tuberculosis.

What harm may we do by failing to make a diagnosis? I cite a case of my own. In 1928 a young single woman stenographer of 22 consulted me because of a hacking morning cough. I was caring for her sister who had

advanced tuberculosis and soon died. I know that this stenographer had been a great deal with her sister and slept in an adjoining room. The history otherwise was negative. There was no sputum, no loss of weight, no tiring, no apparent fever, no night sweats, no pain. The general health was excellent. She looked robust. She had palpitation of the heart on excitement. Physical and fluoroscopic examinations were negative. No x-ray picture of the chest was made. Blood pressure was 120/80, the pulse rapid, the pulmonary second sound accentuated over the aortic second sound. Temperature was 98.3. The tonsils were moderately enlarged.

This patient did not return for reexamination, but I saw her frequently at her work and she seemed well. Fifteen months later she saw another physician who found a cavity in the top of the right lung. She later developed a cavity in the left lung. I have seen her in consultation and know that she has been treated by bilateral pneumothorax, that she will never be entirely well and that the cost of her medical care has been close to \$1000.00 at moderate rates. In addition she has lost already about 7 years of normal life.

The course of this case probably indicates a low resistance to tuberculosis; yet had I kept her under observation after my first contact with her I might have saved her loss of time money and health. The cost of repeated examinations and x-ray films does not compare with the loss of this girl's health.

Let us start in April, 1936, with the next case, again a young woman of 22, married, with a child 6 month's of age. She had a dry cough, slight fever, no sputum. Two weeks before she had spit up a little blood and had pain in the right chest on deep breathing. She had caught colds easily for three years. She had dullness over both lungs and scattered fine rales following cough in the lower right chest in back. Fluoroscopic examination showed marked shading through the right lung and in the upper left. Her hemoglobin was 80%, the sedimentation time 28 minutes, the white count 10,200, lymphocytes 20% and monocytes 6%. Physical examination alone was sufficient in this case to make a diagnosis of tuberculosis. The x-ray film was corroborative but showed no cavities of moment. This girl may recover

by a prolonged sanatorium regimen without special treatment.

On close questioning we learn that this girl spit up blood two years ago. She was then an early case of tuberculosis. The physician who saw her made a thorough examination and an x-ray film of the chest. His diagnosis was probable bronchiectasis but he suspected tuberculosis and advised the patient to return in two months. She did not return. In fact she was so unimpressed with the need of reexamination that she told me her previous examination and x-ray had shown no tuberculosis. I believe she was wrong and that her former physician did caution her. I gain from this incident the impression that we as physicians must more strongly urge on a suspected tuberculous patient the real dangers of their not keeping under observation.

This second case may not be much out of pocket for her failure to avert widespread active tuberculosis but she will have impaired health the rest of her life.

A more favorable case is a young single man, chemist, whom I saw in 1926. He also was 22. He had had scarlet fever at 16, measles at 20, and a cough for 6 months with some sputum. About 2 weeks before I saw him he had streaks of blood in the sputum. He had lost 3 or 4 pounds.

Physical examination showed slight depression and impairment of the apices. The x-ray film was reported by Dr. W. W. Watkins as follows: "Radiograph of this chest shows abnormal amount of hilus density about equal on the two sides. There is a moderate fibrous striation density into the upper lobe areas, more marked on the left side over the first, second and third interspaces. The shadows reach well out into the periphery over the upper lobe area of each side but do not have the definite characteristics of parenchymatous activity."

Despite the almost negative physical examination and almost negative chest x-ray this boy's sputum test was positive. It was never positive again. A few months of sanatorium regimen put him back to work and good health.

Conclusion: I think it worth while to reiterate what you all know. We need to be reminded to examine our patients thoroughly; we must examine, reexamine and reexamine. If we find

tuberculosis early we not only save lives but health and waste of time, money and suffering and will do much toward stopping the spread of this disease.

DISCUSSION

Dr. Trevor Browne: Dr. Thomas has stated that many of us are saying, while listening to these excellent papers on tuberculosis, that "Dr. Thomas is still on the same old hobby." I am reminded by this statement that something like 12 years ago Dr. Meyer stated that no one wishes to hear about tuberculosis. Times have changed greatly since then, and now all are eager to hear all that may be said on the subject and are pleased that men like Drs. Thomas, Storts and Randolph do consider it a hobby. I am interested in the problems of tuberculosis as they relate to children. The great advances in chemistry during the past few years have afforded the medical profession better means for detecting and controlling this disease. The sedimentation tests, for example, are most valuable for detecting the activity of the disease.

Dr. Storts has clearly and concisely covered the important points in the field of childhood tuberculosis.

When the profession and the public can be educated to isolate a child with tuberculosis as they isolate scarlet fever or diphtheria then will we make a great forward step in its control. If the same energy were shown in controlling human tuberculosis as in the control of bovine tuberculosis our statistics today would be entirely different.

Every child is a potential reservoir for tubercle bacilli.

Children who have had attacks early in life are much more prone to succumb in the "teen" age than are those who have not had attacks.

The tuberculin ointment, used in skin testing, is a great improvement over the other methods, and should be used much more frequently than it is.

I express my sincere compliments to those who have participated in this excellent symposium and repeat the warning to guard childhood and the "teen" age against the inroads of this disease.

Dr. Hogeland: I have just one question to ask Dr. Thomas. Is there any surgery to offer silicosis?

Dr. O. H. Brown: My few words are to caution that each physician handling these cases be most thorough in following them through. I have in mind the case of a young woman of about 35 years of age whom I have known since she was a babe. A young tuberculous aunt fondled her when she was but a few weeks of age.

She remained healthy as a babe, as an adolescent and as a young woman, taking her place in social and school activities, and as a young matron and mother. I had forgotten it, but she tells me now that I told her when she was about 14 that she had a well developed induration of one lung and that I gave her tuberculin for a prolonged period. Two years ago in Los Angeles she had successive prolonged respiratory tract infections. She admits that for the past 8 to 10 months she has been ill and recently wrote me the facts. I advised that she have an x-ray of the lungs made. She replied that her physician said it was her throat and not her lungs. Recently she came to me in Phoenix, I had the x-ray made and one apex has marked involvement. The moral, of course, is that we should keep a close watch on those who had childhood tuberculosis or mere exposure. Checking and rechecking is necessary if

these cases are to be kept free of serious tuberculous activity.

Dr. Randolph: Dr. Thomas has given us a valuable presentation and his illustrations are really excellent. His paper is enthusiastic as his subject demands. Some years ago we had in the literature many papers on rest in treatment of tuberculosis. Now we need papers of this type that will bring physicians to realize that tuberculous cases must be referred early to surgeons, when medical measures fail, that the surgeon may bring about a cure without having to resort to too extensive operations. The patient with a single cavity that will not close by pneumothorax may obtain an arrest of his disease by a partial thoracoplasty. In the old days a total thoracoplasty was usually necessary when the patient eventually came to surgery.

I would like to emphasize, however, what Dr. Thomas has only indicated, that rest and sanatorium treatment is important for preoperative preparation and postoperative care in order that the effects of surgery may be of maximum benefit. Medical estimation of the case is important. I am sure that Dr. Thomas is thorough in the medical follow up.

In my own thoracoplasties I begin work where the cavity is located. That may be in most cases at the top of the chest but occasionally at the bottom and in one or two cases I have started with some of the middle ribs when the cavity was located in a mid position, the idea being to attack first the major source of trouble in order that the patient may immediately receive benefit. I agree with Dr. Thomas that large sections of ribs should be removed.

I appreciate the discussion of my own paper and wish only to restate my conclusions that in our own families we may easily overlook the possibility of tuberculosis as well as in private patients with minor symptoms. Careful, thorough examination and re-examination is necessary.

Dr. C. A. Thomas (concluding): I am sorry that I have nothing to offer Dr. Hogeland in surgical treatment of silicosis. The selection of cases of tuberculosis for surgery is most important. After the surgeon has done his work, good as it may be, the patient is not well. Let the physician take his patient over and say when he is best able to return to his work. The earlier the collapse the better. Why wait until there is a "God-awful" spread? Do it early, quickly and safely and return these people to health and to work.

SUGGESTED IMPROVEMENTS IN THORACOPLASTY

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Standardized operations serve well for a while, and then somebody finds a better way. Surgeons whose forte is imitation rather than invention, oppose change for commercial reasons. Progress may be halted, but evolution will have its way. The fittest will survive.

I once stated that pulmonary tuberculosis is a surgical disease. I reiterate that statement. Dame Nature is a very effective old lady,

though her manners are rather crude. She sometimes arrests and occasionally cures tuberculosis, and she always does it the same way. By some means, she succeeds in getting tubercle bacilli submerged in a cesspool of the excreta of tubercle bacilli. That is not a very healthy place for tubercle bacilli, so they seek protection by building around themselves a wall of the most available material. Sometimes it is lime and sometimes it is scar, but they never incarcerate themselves until they are submerged in the aforementioned cesspool. The inside of this refuge becomes filled with the same excreta, and it also effectively prevents the entrance of nutrition necessary for their existence. By whatever means tuberculosis is arrested or eradicated, this program is carried out.

It isn't always necessary to shoot a humming bird with a sixteen-inch gun. Often milder measures suffice, and this accounts for most of the spontaneous arrests. The bacilli always commit suicide if we can make them stay in one place long enough, and keep the patient alive in the meantime. Too frequently, through ignorance, willfulness, or wrong advice, the disease gets out of hand and mixed infection occurs. The moment that happens the disease becomes surgical; hence search for methods by which transportation of bacilli could be prevented. Artificial pneumothorax has brought about the ideal condition in many cases. The burning of pleural adhesions aided many cases. Paralyzing the hemidiaphragm became popular, and was over used, but is settling down to its limited application. Scalenotomy was a help, but its range was limited. Postural treatment, compressive braces, shot bags and other aids were invoked, and did much good. But where cavities had formed, except in a few instances, it was necessary to obliterate the cavities by permanent compression before even partial success could be secured. So plastic operations upon the chest wall were devised. These were used only in advanced cases, uncontrollable by other means. The tendency was to overshoot the mark, and compress much uninvolved lung which was valuable to the patient if it could be retained for functional use. Many cases required complete collapse of an entire hemithorax. Then the idea dawned that selective compression could be used. Too many times the compression was inadequate and the

methods unsurgical. Here entered the extrapleural paraffin pack, which is seldom satisfactory. The object sought is to retain, for functional use, all of the good lung, and put out of commission all of the hopelessly destroyed lung. There are certain disadvantages in the introduction of foreign bodies. So, surgeons began casting about for some method which would not involve the implantation of a foreign body. Transplants, to succeed, must be homogeneous; if they are to survive, and continue to be effective, some part of the individual must be used, the continuous nutrition of which must be assured. It is easy enough to compress cavities of the lower lobes, but tuberculosis has a way of attacking the upper lobe most frequently.

In the early days of thoracoplasty, the surgeon had to be made of rather stern stuff. The writer has lived through that period when endeavors at plastic compression brought accusations of inhumanity, cruelty, and of something very close to murder. However, some cases were successful, and the attitude of the profession, and of the tuberculous populace, has changed to such an extent that now it is necessary to carefully select the cases and refuse to operate on many who are very earnest in their plea for surgery.

Thoracoplasty, like cesarean section, is too simple and easy an operation. Merely removing a few ribs permits sagging of the chest wall, and if the periosteum is preserved this chest wall is held in its depressed position by the reformation of ribs in the new location. Frequently, the sagging is not enough to completely obliterate the cavity. Partial obliteration is almost as bad as no collapse. Some form of living, homogeneous, transplant must be had which can successfully maintain its life and bulk, so as to complete the obliteration of the cavity. The mass of pectoral muscles was first thought of. At first they were mobilized at the outer end and, in some cases, were successful; but they atrophied, and then some one stumbled upon the fact that they must be mobilized at the inner end to maintain their blood supply. A minor difficulty was the limitation of motion of the upper extremity. Fat transplants, either free or pedicled, were made, but they also shrunk and fat is not always available in advanced tuberculous patients. Marsupialization was tried, but it has drawbacks which have

limited its popularity. So the problem was still unsolved. Some years ago it occurred to the writer that the female breast might be suitable material. This has succeeded, in some cases, largely because it can be transplanted and its blood supply maintained from two arteries. Of late years, we have been utilizing a mass of bone and muscle which can be used as an extrapleural pack, which forms a sufficient bulk to compress the posterior chest wall so that apical and upper lobe cavities can be, in many instances, effectively compressed, and which can be used as a mold so that the newly formed ribs can be pushed in far enough to obliterate many of these cavities. Just why the scapula was not thought of for this purpose sooner, is one of the mysteries. By its shape and position, it is eminently adapted to this use; and, because that portion of the scapula which enters into the shoulder joint is so formed that no limitation of shoulder motion is produced when the body of the scapula is dropped into the posterior chest defect, its use is practical.

It is so located that the ribs can easily be removed under it, and, without any supportive or compressive devices, it automatically drops into the hole and does exactly what is desired without any interference with its blood supply. We have tried out this plan in a sufficient number of cases to justify us in advancing it as a possible adjunct to effective upper cavity collapse. The technic is not difficult. The first rib, with its periosteum, must be removed over a sufficiently great distance so that the pull of the scaleni will not interfere with the venetian blind effect. A sufficient number of ribs, from the second down, to permit the dropping in of the scapula, can easily be removed by undermining, and over a sufficient distance so that the body of the scapula and the subscapular muscle mass will not suffer nutritional embarrassment. The scapular mass has sufficient bulk in the right place. It automatically retains itself in place produces the molding compression desired, and maintains its nutrition without crippling the corresponding upper extremity. We have done this for a number of years before announcing it, so as to be sure that the above postulates could all be fulfilled.

I present two cases, the first of which will illustrate the scapular transplant. This young woman has been under my observation

for almost 6 years. She needed more help than could be had by minor means. On January 7, 1936 I did a left paravertebral extrapleural thoracoplasty and removed sufficient sections of ribs to permit her scapula to sink in. This is fairly recent, but she has been free from fever for 4 weeks and her sputum has reduced almost to the irreducible minimum. You can see how little deformity there is and how she can use her left arm.

The second case which I present to you has been under my observation since 1927, and I will show you a series of her X-ray pictures. When she came to me she was a graduate of the burro serum school, and had the cavities quite marked. She had even at that time, a very advanced and a very hopeless condition. She had pneumothorax until it had to be discontinued on account of activity on the other side. She has had a Sauerbruch operation on the left side. Her left lower lobe has been moved up in her chest, so that it now occupies the position of the left upper lobe cavity and, although this change of position has caused a certain lessening of bronchial function, we have here utilized a partially damaged lower lobe as an internal transplant to satisfy our need for a compressive agent for the large left upper lobe cavity. She developed a large cavity on the right side, which was coterminous with the middle lobe. She had much scarring. I estimated that her respiratory capacity was reduced to about 25% of normal; 20% is the irreducible minimum. It was necessary to compress the middle lobe cavity. She had fairly large breasts, so we removed portions of three ribs, with the periosteum, making a permanent window so situated that her right breast could be placed inside of her rib cage or brought outside, at will. It was necessary to leave this breast movable, and devise a harness to hold it wherever necessary, so that she could adjust it to her respiratory needs as governed by the humidity of the atmosphere. Her respiratory margin is so small that the barometer determines the daily position of this breast. She is much more comfortable with it inside and it is kept there most of the time. It would be easy to retain the breast inside of the chest wall by utilizing a bridge of pectoral fascia but if we did this she would be seriously embarrassed when atmospheric humidity rises.

Summary

We suggest that thoracoplasty is not yet a rubber stamp operation. We present two illustrative cases. We hope this may stimulate further investigation and improvements upon an operation which is tending to become standardized. Standardization is the worst thing that can happen in surgery.

SHEEP CELL AGGLUTINATION IN DIAGNOSIS OF INFEC- TIOUS MONONUCLEOSIS

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(Presented before 45th Annual Session of the Arizona State Medical Association, April 23-25, 1936.)

The diagnosis of infectious mononucleosis in the acute stage can now be made by a simple serological test, and need no longer depend upon identification of the mononuclear cells described by Downey and McKinley¹, or upon the difficult process of ruling out other similar acute febrile conditions. Accidentally Paul and Bunnell² during a study of heterophile antibodies observed high concentrations and hemolysins for sheep cells in the sera of patients in the acute stage of infectious mononucleosis. Bunnell³ reported 15 additional cases and stressed the diagnostic value of the test. He also studied a large number of clinical conditions including acute and chronic infectious diseases as well as the blood dyscrasias, and in none of them was he able to demonstrate appreciable increase in agglutinin titre for sheep cells, clearly demonstrating that the test differentiates infectious mononucleosis from other diseases with which it has been confused. Furthermore, he found that the development of agglutinins for sheep cells parallels the pathological lymphocytes which usually appear early, reaching a maximum during the second week and then gradually disappearing. Similarly the agglutinin titre for sheep cells is increased on the 4th day of the disease, reaches a maximum when the pathological monocytes are at their height and then gradually drops off, often disappearing within a month after defervescence. The value of Paul and Bun-

nell's discovery has been confirmed by Bernstein⁴, Boveri⁵, Butt and Foord⁶, Sprunt⁷ and others, and has been generally accepted as specific in the diagnosis of infectious mononucleosis. On the other hand, the therapeutic use of horse serum may produce agglutinins to sheep cells; it has been shown by Davidsohn⁸ that during, or shortly after, serum disease there is a marked increased titre of heterophile antibodies for sheep cells. The blood of these patients may show agglutination titres ranging from 1:32 to 1:64, but rarely higher. In infectious mononucleosis, on the other hand, agglutinations have been obtained in dilutions of 1:4096. Hemolysins and agglutinins for sheep cells regularly occur in low dilutions of normal human sera, though the titre at which the reaction disappears rarely exceeds 1:8.

All sheep cell agglutination reactions are based on the discovery of Forssman⁹ that a substance in the tissues of guinea pigs, cats and horses but not in the ox and rat, stimulates in rabbits an hemolysin for sheep red corpuscles. The terms "Forssman", and "heterophile", antigens have been used for the substances which have the same antigenic properties as have sheep cells. Many animal tissues and some bacteria, including pneumococci and *B. dysenteriae*, produce these hemolysins when injected into rabbits.

It was to determine whether or not bacterial heterophile antigens, during the course of infectious diseases, stimulated in man the production of sheep cell agglutinins that Paul and Bunnell undertook their original work.

The test as originally outlined by Paul and Bunnell is as follows: Serum is inactivated for 15 minutes at 55° C.; dilutions of inactivated serum, ranging from 1:4 to 1:2048, or higher, are set up in 0.5 c.c. portions; to these, 0.5 c.c. of 2% suspension sheep cells is added, followed by 1 c.c. of salt solution, thus bringing the total volume in each tube to 2 c.c.; the test tubes are shaken and placed in the water bath at 38° C. for one hour, left in the icebox over night and on the following morning are read, after each tube has been inverted 3 times with its mouth covered by a finger tip.

Legends for recording the readings are given in the following terms: + + + firm disk, + + disk easily broken into large flakes, + fine agglutination, and ± barely perceptible but fine agglutination.

The above technique of Paul and Bunnell has been generally adopted and gives satisfactory results.

Butt and Foord have added a simple microscopic agglutination technique by which more rapid diagnoses can be made. This consists of taking 1 loop-full of blood serum and 4 loops-full of a 2% suspension of sheep cells in normal saline to make a hanging drop; almost immediate agglutination takes place when sera from cases of infectious mononucleosis or serum diseases are used. Stuart, Burgess, Lawson and Wellman¹⁰ have shown that unless great care is taken in the test conflicting results may be obtained; sheep cell agglutination by normal human serum is greatly influenced by the concentration of cells and the temperature of incubation; and hence the serological test may result in false diagnoses. This may be true when agglutinations occur with low dilutions of the serum; but it is generally agreed that positive readings with high dilutions occur only in infectious mononucleosis and in serum disease.

No adequate explanation has been found for the agglutination reaction in infectious mononucleosis. Paul and Bunnell have 2 views: That the unknown agent responsible for this disease contains the Forssman, or heterophile, antigen and the abnormal cells of the disease produce iso-agglutinins which are responsible for sheep cell agglutination. Recent experimental work by Bailey and Raffel¹¹ tends to show that these agglutinins are not true Forssman antibodies.

The strong agglutinations to sheep cells in infectious mononucleosis strengthens the view of its bacterial origin but indicates that the cause has not been found, because none of the bacteria so far advanced as the causative agent has been shown to stimulate production of sheep cell agglutinins. Paul and Bunnell found no increase in sheep cell agglutinins in Vincent's angina, although Gorham, Smith and Hunt¹² claimed, to have produced the typical blood picture of infectious mononucleosis in guinea pigs by inoculation of membrane from the pharynx of a severe case of Vincent's angina, and that persons in contact with the experimental animals developed infectious mononucleosis.

Two cases to illustrate the value of the Paul

and Bunnell test in infectious mononucleosis are reported.

A white male, 10, was admitted to the Desert Sanatorium on December 15, 1934, because of an injured back. His past history was essentially negative except for a severe serum disease in early infancy, and frequent winter attacks of bronchitis. Periodic urine examinations had been consistently negative.

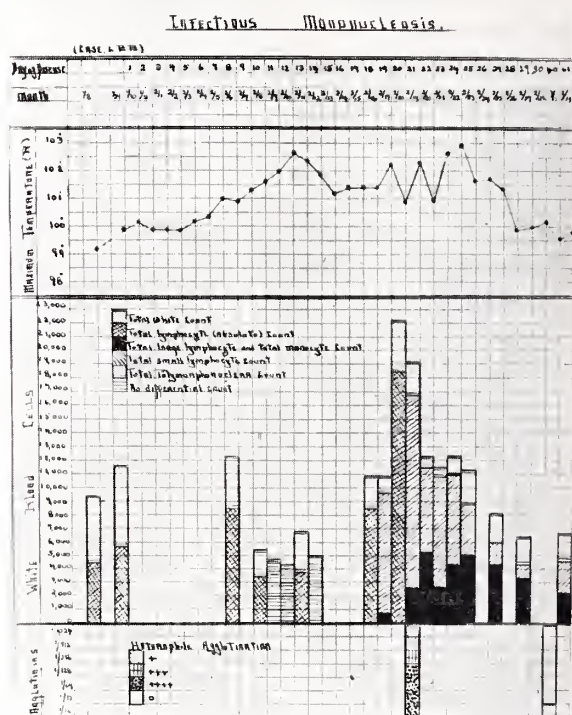
He was a well developed boy in moderate shock complaining of slight lumbar pain, with superficial skin abrasions over the lower back. Immediate urine examination showed a trace of albumin and numerous hyaline and granular casts. Repeated daily urinalyses showed progressive clearing but 10 days following the accident an acute pyuria with high fever set in. Cultures of the urine showed colon bacilli. The course was typically pyelitis with high fever for a week and pain over both kidneys. Convalescence set in gradually and the urine showed progressive clearing.

On January 30th, 1935 the boy developed slight upper respiratory infection. On February 3rd, he had slight fever, moderate pharyngitis and slight cervical adenitis. Despite the subsidence of the pharyngitis, his temperature reached 102.4° by February 14th, swinging between 100 and 102° until February 23rd, when it began falling by lysis, reaching normal on February 26th. This episode lasted about 23 days and was characterized by enlargement of the spleen on the 5th day, enlargement of the liver on the 9th and general glandular enlargement on the 16th day of fever. The red blood counts and hemoglobin remained normal throughout. The total leucocytes showed a progressive drop with a mounting percentage of lymphocytes early in the disease. On February 12th the white blood cells numbered 5000 with 78% lymphocytes, but later there was a rise both in total leukocytes and total lymphocytes. These reached a peak of 22,200 with 82% lymphocytes on February 18th. They then dropped rapidly in total number though lymphocytosis persisted for a long time. The diagnosis of infectious mononucleosis was suspected on the basis of blood smears on February 17th but was not definitely made until a positive agglutination with sheep cells was obtained with the patient's serum in a dilution of 1:1024 on the 21st day of his illness.

The boy made an uneventful recovery and has been well since March, 1935. On March 12, 1935, the sheep cell agglutination was still faintly positive in a dilution of 1:16.

A boy, 19, on November 10, 1935, was complaining of a mildly sore throat and pain in the left lower chest. The temperature was 102°, the pharynx was moderately congested and the cervical lymph nodes were slightly enlarged. He continued to have fever with a peak of 102° with morning remissions. He had severe headaches and night sweats but the chest pain rapidly subsided. A blood count showed RBC 4,500,000, Hgb 15 grams, WBC 7000, neutrophils 45%, eosinophils 5%, small lymphocytes 44%, large lymphocytes 5%, monocytes 3%. The sedimentation rate was 8 mm. at the end of 1 hour (Westgren method). The blood Wassermann was negative as were agglutinations for typhoid, paratyphoid and Malta fever. Acute miliary tuberculosis was seriously considered because the boy had lived with his stepfather who had died of pulmonary tuberculosis, even though the x-ray showed no lung pathology. The throat inflammation subsided after the first few days but there was an increasing enlargement of the cervical, axillary and inguinal nodes, and the spleen was palpable on November 20th; the blood count showed no change in the red blood cells and hemoglobin but the white blood cells were 13,200, neutrophils 15.5%, basophils 1%, small lymphocytes 63%, large lymphocytes 11%, monocytes 3.5%, unclassified 6%. A diagnosis of infectious mononucleosis was made on the basis of blood smears and was confirmed by the sheep cell agglutination test which was positive in a serum dilution of 1:128. The temperature persisted for a few days longer but gradually dropped by lysis. The boy was last seen December 2, 1935, at which time he was feeling well and was entirely asymptomatic. The cervical lymph nodes were still palpable but the spleen could no longer be felt.

If infectious mononucleosis is a specific bacterial disease, as seems likely, it is difficult to see how the first case contracted the condition, carefully guarded as he was against all contact infection, unless a nurse who left the case with a sore throat had a mild attack of the disease. If this could have been proved it would bear out the contentions of Stuart, Burgess,



Lawson and Wellman¹⁰, and of Butt and Foord that the condition is not only common but may be very mild. Butt and Foord are of the opinion that many so-called colds, influenza or sore throats represent unrecognized cases of infectious mononucleosis. Various conditions were considered. In view of the recent urinary infection in the first case the reappearance of fever indicated a perinephric abscess or other urinary complication. This view was strengthened by the mild bacilluria. With the rising white count and increasing lymphocytosis the possibility of acute lymphatic leukemia was considered. Lymphatic leukemia could not be ruled out because of the lack of serious anemia and illness; the pathological lymphocytes described by Downey and McKinley in infectious mononucleosis are sometime difficult to differentiate from the lymphocytes of leukemia even by trained pathologists, as may be attested to by the fact that in this case an eminent pathologist made a diagnosis of lymphatic leukemia.

Similarly, in view of the exposure of the second boy to tuberculosis and the chest pain miliary tuberculosis was suspected, and it was not until a sheep cell agglutination was obtained with his serum in a dilution of 1:128 that the correct diagnosis was made. In both

these cases considerable worry and suspense might have been avoided had the Paul and Bunnell tests been made during the first weeks of the disease.

Conclusion

Two cases of infectious mononucleosis are presented in which the sheep cell agglutination test originally discovered by Paul and Bunnell proved of diagnostic value.

The test becomes positive early in the disease, reaches a maximum at the height of the leukocytosis, and disappears shortly after defervescence.

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SURGICAL MANAGEMENT OF DUODENAL ULCER

JAMES W. HENDRICK, M.D.
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(Read before the 45th Annual Session of the Arizona State Medical Association, Nogales, Arizona, April 23 to 25, 1936).

Since the refinements of diagnosis with the fluoroscope and complete examinations of patients with gastric disturbances are now made, the frequency of duodenal ulcer is being appreciated. Von Eiselberg, Moynihan and W. J. Mayo have given great impetus to the study.

Robertson and Hargis¹, in a study of the stomach and duodenum in 2000 **postmortem examinations**, found inflammation, or ulceration in 12 per cent. Their results were confirmed by other pathologists. In reviewing the histories of the postmortem cases, only 38% had had gastric disturbance.

Blackford² in an analysis of 2000 cases found the ratio of duodenal ulcer to gastric ulcer and to gastric carcinoma to be about 12 to 1 to 3. The incidence in sexes is about 4 males to 1

female. It is often overlooked especially in the female, the symptoms being attributed to gall bladder disease.

Wilkie speaks of the "**ulcer type**," usually an asthenic, active, anxious-minded male whose profession or business takes precedence over meals or sleep. We see ulcers, however, in the stout, phlegmatic, hypothyroid individuals.

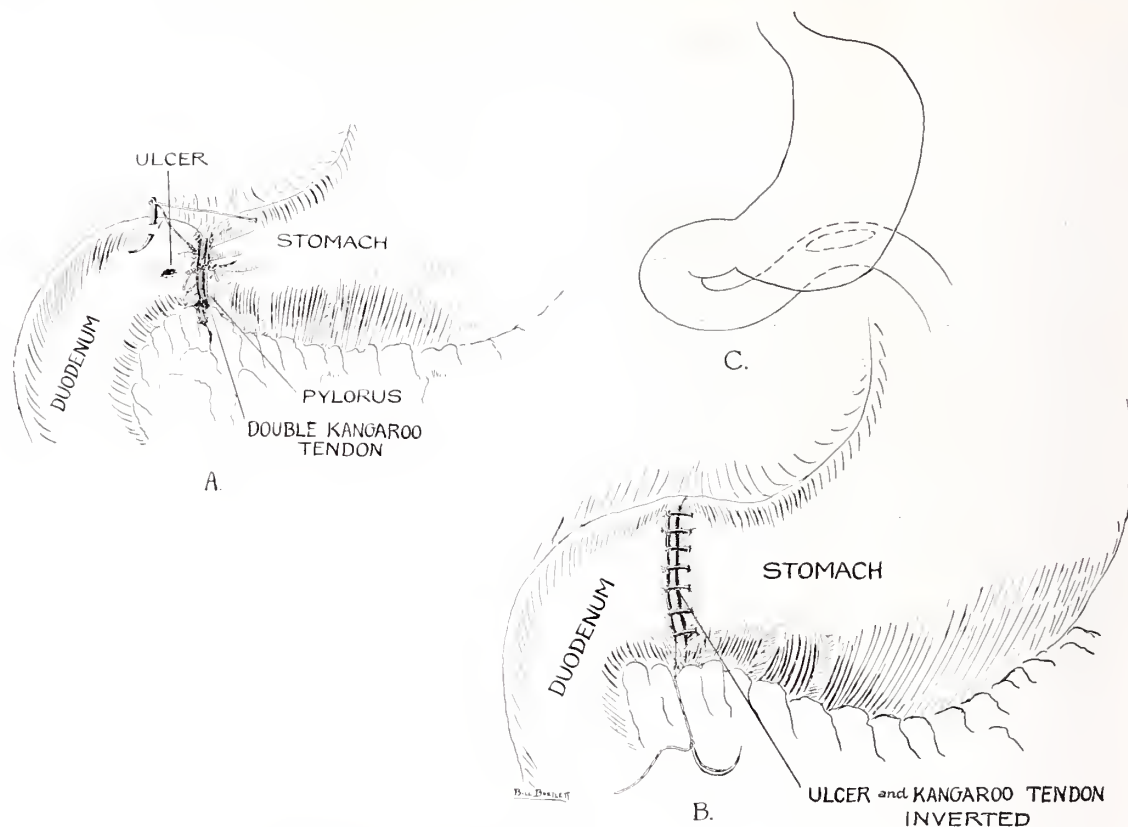
Mann³ and his group of **experimental** surgeons produced chronic duodenal **ulcer** in the laboratory animal simulating that found in man. By traumatizing the duodenal mucosa they produced an acute ulcer which becomes chronic if constantly bathed in stomach acids. If the acids were neutralized, buffered, or diluted, the ulcer healed. They demonstrated that healing is faster and better if the ulcer is entirely protected from gastric acids by pyloric occlusion and gastroenterostomy.

The majority of **ulcers in man** occur within the first .75 inch in the duodenum. This area receives the brunt of the gastric contents forced from the stomach. This area is too high to receive the diluting and buffering effect of the pancreatic juice and bile.

Slight **traumatic or toxic lesions** of this area tend to heal in the ordinary individual, but in one predisposed to ulcer with an unstable autonomic nervous system, an intractable chronic ulcer develops. **Foci of infection** such as abscessed teeth, infected tonsils, chronic appendicitis or cholecystitis prevent healing. All such foci of infection should be eliminated.

The **symptoms** of chronic ulcer are, as a rule, irregular in the beginning. Vague irregular dyspepsia, infrequent at first, later become more constant. In about one-half of the cases the symptoms are intermittent, occurring perhaps periodically in the spring and fall, with acute exacerbations. The symptoms may become progressively worse. Distress usually appears about two hours after taking food. Pain is accompanied by gas, bloating, belching, sour stomach, and epigastric fullness. Nausea and vomiting may ensue. The distress continues until the next meal, or until an alkali is administered, or until vomiting occurs. The pain may be intense, and boring, perhaps radiating through to the back. Such pain is constant and not relieved by food, vomiting, or alkali.

A **history is important** in arriving at a diag-



METHOD of OCCLUDING
THE PYLORUS and INVERTING ULCER
ON THE ANTERIOR SURFACE OF THE
DUODENUM

nosis. Of less importance is chemical analysis of the gastric content following an Ewald meal. An increase in the gastric content and hyperchlorhydria are constant findings. Duodenal ulcer is unlikely without increased gastric acid. The degree of acidity may indicate the type of operation. A fluoroscopic examination with barium is the most important single factor in making a diagnosis. The lesion and retention, if present, may be demonstrated.

Duodenal ulcer in the beginning should have a fair trial of **medical management**, especially in young persons, and in the aged with angina pectoris, diabetes, nephritis, cardiac lesions, etc. Moynihan³ stated in 1932 that the failure of medical treatment was its insufficiency. The average patient often will not subscribe to and remain with it long enough to get results. Men doing manual work especially cannot give time to prolonged medical management and they must have a considerable quantity of food. For this class I advise early surgical management.

Lahey⁶ states emphatically that if medical treatment does not relieve and the following symptoms appear, **surgical intervention** must be considered: Recurrent hemorrhage, pyloric obstruction, persistent pain in spite of medical measures, perforation, and patients who develop alkalosis on medical management. To the above I add the patients who have severe symptoms and live many miles from hospitals and surgeons. Our section of the country is sparsely settled with towns many miles apart. A patient far from a surgeon developing a massive hemorrhage or a perforation is more than likely to die before he can be transferred to a hospital.

Gross hemorrhage occurs in about 20% of duodenal ulcers. In most cases no other symptom except perforation makes the patient realize that there is something wrong. Finister⁷ states "it adds drama to the chronic dyspeptic," and he might have added, drama—and worry—to the attending physician.

Ulcers on the anterior surface of the duodenum are less likely to hemorrhage extensively than are those on the superior and posterior surfaces; no large vessels are on the anterior surface. An ulcer on the posterior



Deformity of the duodenal bulb. Large penetrating ulcer found at operation. Occlusion of the pyloric and gastro-enterostomy.

wall may penetrate into the pancreas and erode the pancreaticoduodenalis artery which passes just behind that area. Chronic ulcers have extensive scar formation and exudate which prevent retraction of the blood vessels and interfere with clotting. In individuals over 50 the danger is markedly increased as arteriosclerosis added to inflammation also prevents adequate retraction and contraction of the vessels. Keifer⁸ has pointed out that gross hemorrhages result fatally in 5% of the cases.

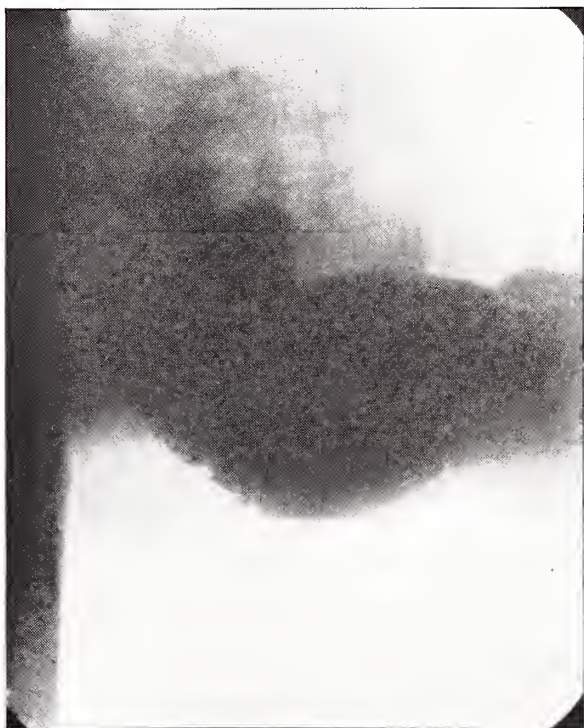
A **massive hemorrhage** should be treated medically. It is best to prohibit all fluids by mouth and give morphine grain 1/6 every 3 to 4 hours and small frequent blood transfusions of 400 to 500 c.c. Intravenous glucose-saline, after 36 to 48 hours prevents dehydration⁹; given earlier it may reduce the viscosity of the blood and restart hemorrhage. Keifer suggests after the second massive hemorrhage that perhaps it is best to operate. These cases are extremely poor surgical risks. Keifer found in an analysis of their cases that massive hemorrhage indicates a severe type of ulcer not likely amenable to medical management.

Gross hemorrhages in about 30% of the patients are followed by **second hemorrhages** within 2 years. Hemorrhage continued in about 65% with 5% ending fatally. The fatali-

ties following hemorrhage should discourage medical measures, and recommend surgery.

A **perforated peptic ulcer** is a real surgical emergency. The mortality depends on early diagnosis and surgical judgment. There has been debate as to whether any procedure other than closure of the ulcer should be instituted. I am of the opinion that the findings at operation should dictate the measures necessary. It is the chronic ulcer with considerable inflammation and cicatricial contraction which perforates. After closure of the ulcer, if stenosis seems likely, gastroenterostomy should be done. This is exemplified in the following case:

A male, 27, was seen at 1 A.M. in shock with intense pain in the abdomen; he had had symptoms for 3 years, and had been advised by his physician to take soda when he had dyspepsia and not to eat meat. For 2 months previous to the perforation he had vomited almost all of his meals. He had lost 35 pounds during the past three months. After eating a cheese sandwich and drinking a bottle of home brew, he developed a sudden sharp pain in the epigastric area. A diagnosis of perforated duodenal ulcer was made. The patient was operated upon immediately. A large ulcer on the anterior surface of the duodenum was closed with purse string sutures and covered with omentum. Complete occlusion was present. A posterior gastroenterostomy was then done. The patient made an uneventful recovery. Re-examination with barium meal at yearly intervals has shown the pylorus still occluded.



Deformity of duodenal bulb. Gastro retention at end of 18 hours. Large penetrating ulcer found at operation. Pyloric occlusion and gastro-enterostomy.

There are 2 main **operative procedures** for the **relief of duodenal ulcer**: The direct attack by pyloroplasty and partial duodectomy with gastric resection and the indirect by gastroenterostomy and gastroduodenostomy. If every case of duodenal ulcer is carefully studied, and the correct procedure applied end results will be most satisfactory.

The **direct operations** have the advantage in that they permit discharge of gastric contents into the duodenum by the natural opening. Where pyloroplasty can be executed it has the advantage of removing the ulcer, of doing away with the pyloric sphincter and in hemorrhage a direct attack can be made on the ulcer. Again in recurrence other operative procedures can be executed. It has the disadvantage of being limited in applicability.

Wilkie has popularized **gastroduodenostomy** though more difficult than gastroenterostomy and reports excellent results. It can be applied only to certain types of lesions. The duodenum must be mobilized so that anastomosis can be made between the second part of the duodenum and the stomach. Its advantages are: An anterior wall ulcer can be inverted making perforation unlikely; the first part of the duodenum where the majority of ulcers are is circumvented; and gastric stasis and pyloric spasm are entirely relieved. The second part of the duodenum is relatively tolerant to acid contents as it is more alkaline and has the bile and pancreatic juice to dilute and buffer the acid contents.

Posterior gastroenterostomy is the popular procedure in this country. It has definite indications and contraindications giving satisfactory results in a good percentage. Its greatest influence is in long standing cases with stenosis and low acidity. It should not be done in young individuals with marked hyperacidity. I have found its usefulness increased if the pylorus is occluded by double kangaroo tendon around the pylorus tied tight enough to occlude but not to produce necrosis. The stomach is sutured to the duodenum, thereby inverting the kangaroo tendon. An ulcer on the anterior surface of the duodenum also can be inverted. This technique has served in hemorrhage where pyloroplasty was impossible and the risk would not permit a partial gastrectomy. Von Eisberg demonstrated years

ago that an ulcer heals, and hemorrhage ceases with occlusion of the pylorus and gastrojejunostomy.

Partial duodectomy and gastric resection is the most satisfactory operation for duodenal ulcer. It is especially useful in hemorrhagic ulcers with marked hyperacidity. It removes the first portion which is most vulnerable to ulcer, and brings about anacidity; recurrent ulcers are rare. Either the Billroth I or II method may be used. This method of ulcer management is used more than any other in continental Europe. Finster's experience with it has been extensive and his results gratifying. The only disadvantage to the procedure is an increased mortality, it being a more formidable operation than any other for duodenal ulcer. I have hesitated to use it on poor risks.

The **gall bladder should be inspected** and removed if found diseased. It is well to remove the **appendix** routinely. Rosenow⁹ found pure cultures of streptococci in ulcer bases. Foci of infection play an important role especially in recurrent ulcers. The lymphatic drainage from the appendix and gall bladder gives an important clue to ulcer development.

A careful regulation of the **diet** must be insisted upon following surgery for a period of at least **6 months**. Exclude all condiments and salt-cured articles, with moderation in smoking. As Wilkie stated, regulation during this period will be repaid.

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The **Biological Photographic Association** is having its 6th annual convention in Boston. September 24th-26th at the Hotel Lenox. A cordial invitation is extended to all interested photographers and scientists. There will be an exhibition of photographs from all over the country and a display of equipment and supplies. The membership of the society is open to all whose duties include biographical photography. The secretary is Miss Anne Shiras, Magee Hospital, University of Pittsburgh, Pittsburgh, Pa.

MEDICAL ANNALS OF ARIZONA

HEALTH AMONG THE NAVAJOS

SIDNEY J. TILLIM, M. D.
Amityville, N. Y.

I. The Habits of the People

The land of northern Arizona and New Mexico, between the Grand Canyon on the west and the Chaco Canyon on the east—over 30,000 square miles—is the Navajo Reservation. It is an alkali-laden desert with a sprinkling of oases, varicolored mountains, mesas, and valleys—the land of “painted” deserts. Cyclonic sandstorms during the dry months, torrential rains with little warning in the spring and fall, snowstorms in heavy drifts plus sub-zero temperature, are hazards of existence not infrequently encountered.

By language, the Navajos seem related to the tribes of the northwest. Certain of their physical features, such as shape of eyes with retention of inner canthal fold, and distribution and quality of hair suggest an oriental ancestry. But, according to their legends, they have always lived in this particular part of the country, except for the few years in captivity at Ft. Sumner, N. M., in the 1860's. They began life in the canyons. Great waters came and lifted them high. When the waters receded they found themselves on top of mountains and mesas which they conquered from great giants and beasts. Gradually they extended their conquests to the valleys. To this day their Gods and Evil Spirits are supposed to live in secret hiding places of their sacred mountains. The wild animals of their country are religiously feared or loved for the part played in the people's early struggle to survive.

They are essentially a pastoral people. Raising of sheep and goats is their chief industry. The beginning of this industry dates far back into the history of the people. They had always raised sheep and goats. When they were returned from Ft. Sumner about 1867-8, they had but few of them. The Government, two years later, gave to every individual, adult and child, two sheep and a few years later a third one. These were the nuclei for the present herds, some of which count into thou-

sands. In the spring the flocks are brought to the valleys, near water holes, and late in autumn to the mesas or to places where the winters are less severe.

Generous and charitable in the extreme, the Navajos are strictly individualistic. They feed and shelter strangers when they themselves are in dire need. Seldom does one find communities of more than three or four hogans; nor can an Indian be persuaded to support a project that may benefit only a distant section of the tribe. They will band together to build dams provided they share in the water from them. They will leave the main roads rutted and torn, if they can get by with their wagons or find another road. There are scores of small sections within the reservation, each loosely guided and counseled by a headman. In recent years the Federal government has encouraged by organization and teaching the necessity for tribal unity and interest. The annual meetings of the tribal council, consisting of elected delegates from all sections, have done much to bring the needs of the tribe, as a unit, before the Indian affairs office in Washington.

Except for cliff-dwellings, now seen only as old ruins, the hogan is the primitive sheltered place in which most of the Navajos live. It is a multi-angular or round, single room made of logs and covered with adobe mud taken from the neighboring ground. These homes are without windows or floors, having only a large hole at the top and on the east side always a small door. The furnishings generally consist of goat-skins and sheep-skins for sitting and sleeping upon, a wooden box or crude, hand-made cupboard to hold perishable foods and the very meager cooking utensils, a bucket for hauling water, an old harness hanging on the wall, an antiquated shotgun or rifle which is occasionally used to frighten off coyotes or to kill rabbits, an old trunk or box for the few personal belongings, an unfinished blanket on a loom, and a chimney-pipe of old sheet-iron or tin cans suspended from the roof to direct the smoke from the open fire in the middle of the hogan. From this minimum, in most of the homes, there are grades of modernization. Occasionally there is an old sewing machine, a small mirror, an inexpensive alarm clock, an

(Continued on page 276)

SOUTHWESTERN MEDICINE

Printed by THE A. C. TAYLOR PRINTING CO., Phoenix, Arizona
Published monthly for the Board of Managers of the four constituent societies.

VOL. XX

JULY, 1936

No. 7

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PHYSICIANS EASY VICTIMS OF "DEAD BEATS"

The following editorial contains our thoughts far superior to what we can express them. It is taken from the Maine Medical Journal and was probably written by Editor Edwin W. Gehring. I am sure Dr. Gehring would not make us hard hearted, but he would have us have as much commiseration for ourselves and our families as we have for our patients. We ourselves repeatedly spend money, for gasoline to call upon patients that neither need, deserve, nor pay for the attention, and our wife could well use the money so expended for a much needed frock or a useful gadget about the house. There is no reason why we shouldn't ask persons seeking our services about the financial side of the transactions. We ourselves have been working for the last several years on a rating system as to how the people pay the physicians of our community and it now seems near successful culmination, if the physicians of the community will co-operate. There are a certain number of persons in every community who run from one doctor to the next neither paying, nor intending to pay any of them. "Dead beats" of any type ought to be at least listed. There is no more reason why a "dead beat" should have his medical attention for nothing than that he should have his groceries for nothing.

Read the splendid editorial:

"Doctors Are a Cinch"

"These words are alleged to have been spoken by the young hoodlums who lured Dr. Silver C. Peacock from his home one evening on the pretext of seeing a sick child that did not exist, and then brutally murdered him.

"Finding themselves in the toils of the law, they

nonchalantly unburdened their souls somewhat after this fashion, 'Yeah, doctors always come when they are called and they never mind where they are told to go. Easy to get them to go to the sticks and way out in funny places. We could do 'em up good there.'

"No truer word ever was uttered and, to drop for a moment into the gang's vernacular, 'they said a mouthful.'

"The profession consists of Peacocks, men who heed gladly every call for help that comes to their ears, without thought of personal comfort or of convenience or of remuneration. In other words, the spirit of altruism ever determines the doctor's course. When, however, a virtue is carried to the nth degree, as it is by us, it becomes absurdity, if not a vice, and reduces those who practice thuswise to the status of suckers.

"Faith in humanity is not always rewarded by one's fellow men as one expects it to be. To be sure, calls upon errands of mercy fortunately do not culminate, as a rule, in murder of the physician, but too often he is robbed. Robbed of his rest, time, leisure, skill and fee, for, far too frequently, the bill never is paid. By whom? By persons without much conscience in all walks of life whose commercial credit rating is fair or good but whose medical credit rating is zero minus. With brazen impertinence they demand a service for the payment of which they simply manifest a supreme indifference. When sickness again overtakes them, they appeal to another altruistic ass (synonym for doctor) whom they have not fleeced previously, with the same result so far as the doctor is concerned.

"The remedy for correcting this outrageous situation in part, at least, lies with the medical profession. It consists in tempering mercy for others with justice to them and to ourselves; in preserving our self-respect and dignity as a profession by assuring ourselves reasonably well whom we are serving at the beginning of treatment by inquiry into their ability and willingness to pay, through the organization of a medical credit system comparable to that in use by merchants. This was advocated by me during my term as president. The plan is feasible, easy of accomplishment, inexpensive, and calculated, as nothing else will, to cause all persons to improve and maintain their medical credit rating. To continue to submit to the stealing racket practiced by pirates and parasites, spongers and sidesteppers, without making any effort to check an intolerable and disgraceful abuse is to forfeit the respect of the people, including the dodgers, and to justify the use by them of the phrase, 'Gee, doctors are easy. They always come when they are called.'



Dr. M. B. Culpepper, president of the **New Mexico Medical Society**, was born at Weston, La., September 23, 1870. He was educated in the local schools and attended the Louisville, Kentucky, Medical School in the year 1891-92, and then the Tulane University, graduating in 1894. He located at Hoods-Mills, La., practicing there 'till 1907. He first located at Dayton, New Mexico in 1907 and removed to Carlsbad in 1916. He does general practice. He is a member of the local and state medical societies and of the Southwestern Medical Association.

Dr. Culpepper has enjoyed an extensive practice but has always found time for organized medicine. He has rarely been absent from the state meetings. He is married. He is associated with Dr. L. H. Pate. We predict a profitable year for the New Mexico Medical Society under the guidance of Dr. Culpepper.

Dr. George W. Jones, president-elect, of the **New Mexico Medical Society**, has been in private practice since 1927. He located in Clovis in the year 1926 being employed by the Santa Fe Hospital Association.



He received his doctor of medicine from the University of Cincinnati in 1925. He spent a year internship at the Kansas City General Hospital. His pre-medical work was done at the University of Kansas. He attended Ward School and High School in Kansas City, Mo. His birth place was Council Grove, Kansas in 1900. He did post-graduate work in Vienna in 1927.

Dr. Jones served during the World War in the United States Marine Corps. He is a member of the County, State, and National Medical Associations and the American Legion. His social fraternity is Sigma Alpha Epsilon and his medical is Nu Sigma Nu. His practice is general with an inclination to surgery and x-ray. He is married and has two sons. Dr. Jones is enthusiastic about organized medicine and will make the New Mexico Medical Society an excellent president. His hobbies are golf, chess, and fishing.

First International Conference on Fever Therapy will be held at Columbia University New York City, September 29th to October 3rd, 1936. Baron Henri de Rothschild of Paris.

France, will be the chairman. The American Committee consists of Drs. Desjardins, Bierman, Hartman, Kinsie, Neymann, Simpson and Warren. The various therapeutic uses of heat will be discussed and the abstracts of the papers will be published in a volume in English, German, and French.

Information regarding this conference may be secured from the general secretary, Dr. William Bierman, 471 Park Avenue, New York City.

The American Board of Ophthalmology announces the removal of its executive offices to room 1002, Beaumont Medical Bldg., 3720 Washington Blvd., St. Louis, Mo. Dr. John Green, secretary-treasurer, announces that all candidates expecting to appear for examination in New York City on September 26th must file their applications and 10 case reports before July 25th.

The American Congress of Physical Therapy announces its 15th annual session September 7-11th at the Waldorf Astoria in New York City. In addition to an extensive program with sectional meetings and various specialties, there will be both technical and scientific exhibits and a full day of hospital clinics.

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.
Director, New Mexico State Bureau
of Public Health

Vaccination Against Tuberculosis: In marked contrast to the sensational stories in the lay press of condemned criminals submitted to scientific experiment are the scientific reports now appearing under the signatures of H. J. Corper and his fellow workers at the National Jewish Sanatorium in Denver.

Their observations are upon the reaction of the organism to live and killed, virulent and avirulent tubercle bacilli injected into the skin. Such observations have been made before. The present research carries us further in two respects: It is made on an exact quantitative basis which has not previously been possible, and observations made on animals have been repeated on man.

There is definite evidence of artificial immunity as shown by retardation of the lesions of experimental infection subsequent to the vaccinating dose. This immunity is probably independent of allergy since allergy results from the injection of killed bacilli and immunity only from the injection of viable bacilli. The immune effect requires time to develop and apparently is effective only against subsequent infections or metastases of previous lesions but not against the development of established lesions.

Avirulent human or bovine bacilli may be injected in the amount of 0.01 mg., sufficient to produce tubercle and immunity without producing ulceration. In this dose the bacilli lose their viability in from 4 to 6 months.

There is a biological specificity in the immunity to virulent bovine infection resulting from vaccination of animals with avirulent bovine bacilli.

This suggests that in man greater protection against virulent human infection would be obtained by vaccination with avirulent human bacilli than with avirulent bovine bacilli (B. C. G.). There is also evidence that immunity would be reinforced by repeated intracutaneous injections.

This laboratory research indicates that vaccination may have a practical value in the prevention of tuberculosis. How great that value may be can be measured in the laboratory, but only by the clinician using statistical analysis. The methods used at the Henry Phipps Institute of the University of Philadelphia are capable of reliable evaluation of the practical success of vaccinating contacts of open cases of tuberculosis. The necessary control observations are already on record.

REFERENCES

- Corper, H. J. et al.: Studies on the Behaviour of Tubercle Bacilli within the Body, *Amer. Rev. Tuberc.* 33:679, May, 1936.
Vaccination against Tuberculosis—A Comparative Study in Man and Animals, *Jour. Infec. Dis.* 58:158, March-April, 1936.
Opie, E. L. et al.: Studies in Tuberculosis V. and VI. *The Am. Jour. of Hyg.* 23:493-515, May, 1936.

SOUTHWESTERN MEDICAL ASSOCIATION

The Secretary's Column

Chairman of the program committee, Dr. E. W. Rheinheimer, reports that he has secured acceptance from speakers for the **post graduate program** for our November meeting representing the following specialties: Surgery and chest surgery, internal medicine, x-ray, industrial surgery, clinical laboratory and allergy, genito-urinary surgery and eye, ear, nose and throat.

After the program is actually prepared if there is sufficient time left to warrant it, Dr. Rheinheimer will invite an obstetrician.

All speakers hold chairs in Universities with a geographical distribution taking in Chicago, Richmond, Virginia, St. Louis, San Francisco, Kansas City and Denver.

As the budget permits more money to be spent on this program than previous ones, it naturally follows that we may expect a larger and more varied program and from teachers from greater geographical distribution.

The names of the speakers and their subjects will perhaps be announced in the next issue.

Eighty-seven members are still in arrears for their 1936 dues. With the majority of these members we are sure it is only an oversight. In accepting this notice as an earnest appeal to remit, each delinquent member will not only place himself in good standing but will conserve the funds of the association for we must now lay down a barrage of personal appeals which, of course, is expensive. Do it today.

MEDICAL ANNALS OF ARIZONA

HEALTH AMONG THE NAVAJOS

(Continued from page 273)

iron box-stove, and an old mattress. The comparatively few more progressive and better-to-do Indians live in sturdier, roomier hogans of two or three rooms, with an old bed or two, a crude table or stool and, on the walls, pictures from the society columns and gravure

sections of newspapers, or cheap portraits. There are a few inexpensive modern frame houses of a class corresponding to those found in the poor sections of small towns, but even these rarely have running water or bathrooms. It is common to find five, seven, or even more persons, including three to four adults, living in a single hogan. During a "sing" or healing ceremonial the hogan, about 12 feet in diameter, may for days house a dozen or more persons.

The diet of the people consists mainly of bread from hand-ground cornmeal, meat from goats and sheep, corn, a large variety of melons and desert peaches, and such canned goods as they can afford. They are heavy users of cheap coffee which contains a high percentage of chicory. Their means of keeping food are extremely unsanitary; the bread, flour and vegetables are kept in open containers on the ground, and the raw meats are hung inside or outdoors, exposed to flies and dusts. The water supply is uncertain and, in most instances, apparently impure. In the winter they depend largely on melted snow gathered in buckets. In the spring they trap water coming down the mountain into the canyons. During summer, when there is usually a serious scarcity of water, they depend upon a few artesian wells and windmills, and a few water holes or improvised dams in the canyons. Serious quarrels and fights at times occur between neighbors, even members of families, over the question of exclusive right to a water hole or small creek. There are no privies, and no other provisions for sewage or waste disposal than the open desert. Their method of covering personal excreta is animalistic—hurriedly kicking earth over it.

The Navajos, in the main, lead an outdoor life, except from about the first of December to the last of March. Nearly always during the day one finds the little Indians, ragged, barefooted and dirty, playing about the hogans with their dogs, young lambs, or with each other. They are a happy lot, readily embarrassed in the presence of white strangers. The adults go on long trips, perhaps trying to sell blankets; an Indian will ride his horse many miles, spending days in travel, to sell a blanket for a half dollar more than he can get from his near-

by trader. They make long journeys to visit friends and while away their time lying in the shade. In the autumn they are outdoors, traveling to and from ceremonials, usually spending a few days at a ceremonial, sleeping in or under their wagons, or at a neighboring hogan. Within the last few years they have increased their truck-gardening. A few raise sufficient melons, corn and vegetables to sell or trade small quantities with their neighbors, the trading-post, or the nearby Federal school or agency.

Benefits to health from an outdoor life are over-balanced by the ill effects of, overcrowding, lack of sanitary provisions, and the poverty which leads to a poor, inadequate supply of food. The Navajos are one of the poorest of the many Indian tribes on Federal reservations. Prior to 1929 they derived income from royalties on oil leases—there has been comparatively little paying oil on the Navajo reservation—the sale of timber and grazing rights. The income from these went into the tribal treasury for the use and benefit of the tribe. Individual incomes were chiefly derived from the sale of sheep, wool, blankets, tinons gathered in the fall, silversmithing, and unskilled labor. Their blanket weaving and silversmithing are favorably known throughout the United States and a few years ago brought good prices. It has been estimated that in good times the average annual income per person was less than \$500.00. Since 1929 the demand for their goods and wares is probably halved, and the price is half or less. As a result of reduced individual incomes the tribal funds were wiped out by 1933. A questionnaire from 450 married men with an average of 5.2 persons to a family, showed that they possessed 326 teams of horses, 221 pairs of harness and 178 wagons. The actual number of horses is probably higher because the question specified teams; nearly all Navajos have one or more saddle horses. They had a total of 29,976 sheep, or an average of 66.6 sheep to a family. According to the prices paid by the Government to the Indians in 1933, top prices for the grade, each family owned about a hundred dollars worth of sheep. The economic status of the Indian, however, is a story by itself.

(To be continued)

Stephen Schuster,
President

EL PASO COUNTY SOCIETY DEPT.

L. O. Dutton,
Secretary

EL PASO COUNTY HOSPITAL STAFF MEETING MAY 20, 1936

DISCUSSION OF CASES

Two case histories had been mailed to each member a few days before the meeting.

Case One: An American former school teacher, 74, entered the hospital March 24, 1936 with pain in right upper quadrant of 16 hours duration—cramping in nature and almost constant. He slept very little the night before admission. There was no vomiting, though nausea was constant.

Constipation had existed for several years. The stools at times had been dark, but never clay-colored.

Past History: About 1 year ago the patient had a "stroke" with right side paralyzed; recovery was slow. He still walks with difficulty. He had pneumonia, influenza and measles years ago. Part of his life has been spent in the Philippine Islands. He had been active most of his life.

Physical Examination: (Abnormal findings only.) He was fairly well nourished and developed; he appeared acutely ill. Temperature was 97.8, pulse 76, regular, blood pressure 140/90 and respiratory rate 18, regular but shallow.

Teeth were in poor condition, eye reflexes sluggish and sclerae jaundiced.

Abdomen was flat with voluntary rigidity and tenderness over the region of the gall bladder; skin was slightly jaundiced; nodes palpable; deep reflexes were absent, except of the right leg, and these were hyperactive; hearing was poor.

Laboratory Data: 3/24/36 wbc. 13,000. polys 90%, monocytes 5%, lymphocytes 5%; Kahn negative.

Urine acid, albumin 3-plus, red blood cells "few", white blood cells "few with clumps" and casts "few finely granular."

On 3/26/36, white count was 10,800. polys 84%, monocytes 4% and lymphocytes 14%.

On March 25 pain was slightly less. On March 27, though he felt better, he was irrational a part of the time; temperature remained around 100°. He became comatose and died on March 30.

Dr. Waite: All obtainable facts are presented in the above history.

Dr. Duncan: The best guess is coronary occlusion, but the record is too incomplete to make a diagnosis.

Dr. Hardy: This departure from the ordinary staff meeting program is most valuable and really worth while.

Pancreatitis is supposed to give pain in the left side instead of the right. It is not uncommon for cases of acute pancreatitis to slide over into diabetic coma, so in approaching this diagnosis from another angle we can say there is one dominant

fact: He died in coma. It could be diabetic coma or nephritis or anything that would change the blood chemistry. The low blood pressure does not speak against the diagnosis of nephritic coma. Glycosuria with pain in the right upper quadrant does not fit in with diabetic coma, but might result from acute pancreatitis. My guess is hepatic degeneration. I think perhaps it might be yellow atrophy, probably subacute. However, the record does not show that the man was deeply jaundiced nor that the urine contained bile. Fitting more closely with the general course is hepatic coma, associated with obstruction of the biliary tract. Another important fact is that there is no statement as to whether the man had diaphragmatic spasm, but the statement of the cramping pain is characteristic of obstruction of the biliary tract; my guess is subacute liver degeneration.

Dr. Ralph Homan: This case closely parallels 2 cases we have had in the last several years, that could not be diagnosed as anything but arteriosclerosis—both in old persons. Both had low blood pressure. One showed multiple infarcts of the small and large intestines, and in the other very noticeable places in the liver. In both cases there had been paralysis a year or so before. I think that is a pretty fair guess in this case.

Dr. Gorman: The thing I would be particularly interested in knowing is the past gastrointestinal history. The pain in the right upper quadrant might have been dull, or sharp. An abscess may have existed there; jaundice would have been possible at his age and with his temperature. The question of arteriosclerosis is probable considering his age and the recent stroke. He had a little fever, however, which needs explanation. In subacute hepatitis the jaundice should be more marked than reported and his pulse should be a little slower. I would like to know if he had had respiratory infections preceding this illness. Jaundice and infection of the biliary passages is not uncommon following respiratory diseases, especially at that age. I suggest an abscess in the right upper quadrant.

Dr. Dutton: There is one significant thing in the history: His residence in the Philippine islands, where there are a large number of tropical parasites, some of which invade the liver and could give a clinical picture comparable to this.

Dr. Boyle: I state in my defense that we tried to get a more complete history. The autopsy done by Dr. Waite revealed (positive findings only): Body is of an old white man of good size. The abdomen has excess clear fluid. The cecum is distended with gas. The gall bladder is adherent to the colon and duodenum and has no stones.

The right pleural cavity contains a large amount of serum and blood clot. The lung is partially col-

lapsed and has extensive hemorrhage in posterior portion beneath the pleura just anterior to the spine extending from apex to base reaching anteriorly. There is hemorrhage posteriorly in the left lung.

A large hematoma lies in the posterior mediastinum surrounding the descending thoracic aorta, reaching to the abdominal vessels. The posterior mediastinum is filled with clotted blood. On section marked patches of sclerosis are found in both the thoracic and the abdominal aortas. At about the level of the diaphragm there is a large perforation through into the posterior mediastinum apparently the source of the hemorrhage. From here it extended into the lungs and the right pleural space.

The kidneys are markedly cystic, and there is fat in the pelvis. The mucosa of the stomach is pale. The pancreas is pale, and soft. The prostate is slightly enlarged. The heart is considerably enlarged, particularly the left ventricle—the muscle measuring 35 mm. in thickness.

Diagnosis: Arteriosclerosis of the aorta with ulcer; hemorrhage into posterior mediastinum and rupture into right pleural cavity; right hemothorax; right atelectasis; chronic pericholecystitis; and cystic and chronic nephritis.

Dr. Dutton called attention to the statement in the physical examination that the lungs were clear.

Dr. Waite showed colored moving pictures of the heart and aorta which showed very plainly the **point of rupture and the other findings** reported in the autopsy.

The second case is that of a Mexican mechanic, 52, who entered the hospital complaining of pain in the upper right quadrant, which he had had for 2 months, acidity and gas of stomach and "mahogany" colored urine for 6 to 8 months, light yellow stools for 1 month and a subcutaneous nodule in right lower quadrant for 3 weeks.

Two months ago the pain did not bother him much. The pain was dull around the costal margin. He had an increased fullness in the right upper quadrant for the past 2 months.

The nodule, very small at first, has now grown to the size of a grape.

Past History: Negative.

Physical Examination: (Positive findings only) He is poorly nourished and developed, and appears acutely ill. Temperature is 99.4°, pulse 96, of poor volume, respiration 20, normal, and blood pressure 125/85. There is slight jaundice shown in the eyes. The diaphragm is slightly elevated on the right.

Heart: No abnormalities of rate or rhythm. No murmurs.

Abdomen: The abdomen is generally distended, especially full in the right upper quadrant. The liver is enlarged 4 fingerbreadths below the costal margin, non-nodular. In the right lower quadrant

is a hard subcutaneous nodule the size of a grape and the skin is adherent to it.

Laboratory Findings: wbc. 13,000, 90% polymorphonuclear, 2% monocytes, 8% lymphocytes. Blood Kahn and urine, and stool were negative. HNO₃ test for bile was positive.

Van den Bergh: Direct reaction began immediately, and was complete in 3 minutes. Indirect: 15 van den Bergh units. Icteric index was 25.

A film of the chest on 4/13/36 showed extensive pleurisy on the right side, with interlobular pleurisy. G. I. series was negative. The patient gradually became worse, and on his 10th day in the hospital became jaundiced all over, and died at 7:45 a. m. on his 11th day in the hospital.

Dr. Waite: This 2nd case had pain in the upper quadrant, but with a different type of history than that of the 1st case.

Dr. Green: With the history of chronic gastric symptoms over a long period with recent yellow stools, makes certain, I think, that there is obstruction in the pyloric tract. Due to the fact that there is a little elevation of temperature I think we have to consider an abscess of the gall bladder. There is undoubtedly also a hepatitis. He has an enlarged liver. I think undoubtedly there is obstruction of the pyloric system.

DR. HARDY: There is an enlarged, tender liver; the man is emaciated; and certainly the clinical picture is that of malignancy. My guess is carcinoma of the liver with metastasis to the stomach.

Dr. Waite: Carcinoma of the liver as a rule does not metastasize.

Dr. Hardy: Possibly it metastasized from the stomach.

Dr. Cummins: Possibly there was a subphrenic abscess. My guess would be malignancy. This nodule probably was malignant. I suspect he had malignancy of the liver, with probable metastasis to the pleural cavity.

Dr. Ralph Homan: This case sounds like cases we used to have for study. The histories were a little different, but in every case it was carcinoma at the head of the pancreas.

Dr. Waite: I think there is no question in anyone's mind but that this is malignancy. Now may we have the postmortem report?

Dr. Robbins: The autopsy report (by Dr. Waite) (positive findings only) is as follows:

Body is that of an emaciated, jaundiced Mexican with a small skin wound in the right side.

The abdomen is filled with bloody fluid. The liver is markedly enlarged nodular and mottled. The duodenum is adherent in the gall bladder area to what seemed to be gall bladder but later proved not to be. On section of the stomach and duodenum, there are no lesions. The prostate is not enlarged. The kidneys present no gross lesions. The liver is removed and is about twice normal size. The area from which hemorrhage occurred cannot be located.

The gall bladder is imbedded in a growth, and the walls are markedly thickened, containing one large gall stone.

On opening the chest the right lung is extensively bound to the diaphragm with fibrous adhesions. Numerous small hard nodules are scattered through the lungs.

Microscopic Examination: Section of gall bladder shows the wall markedly thickened and infiltrated with a new growth made up of epithelial cells with an attempt at glandular arrangement.

Section of the liver shows an extensive new growth like that seen in the gall bladder. There are a few areas of liver cells remaining and these are deeply bile-stained. In some areas there is hemorrhage with necrosis.

Diagnosis: Carcinoma of gall bladder with metastasis to liver, lungs and coeliac nodes; acute abdominal hemorrhage.

Dr. Waite showed colored motion pictures of the liver and gall bladder illustrating the above findings.

Dr. Hardy: I congratulate Dr. Waite on this innovation. If everyone cooperates we can make this a good teaching institution. There is one thing, however, that I would like to say. I am not ambiguously criticizing, but these 2 histories (though I must admit they compare favorably with the ones I take) are not complete, and contain inaccuracies that are misleading. For example, it does not seem possible in the 1st case that the liver was not palpable. In the 2nd case no mention was made of fluid in the peritoneal cavity.

Dr. Ralph Homan: I want to say one thing for

the intern on that first case. I think in making up this case history not enough attention was paid to the chart; numerous mention was made on the chart that the man was irrational and that it was impossible to get a history.

Dr. Morrison: I saw the 2nd patient in the evening before he died; he did not seem in a very bad condition; the abdomen was soft and flat. A few hours later he was dead. Evidently he had a hemorrhage after that—dying in a few hours; that is the reason no mention was made of fluid in the peritoneal cavity.

Dr. Awe: There is one suggestion: In the 2nd case a hemoglobin determination and a red count might have been of value.

A separate children's ward is being planned at the Masonic Hospital. The El Paso Junior League are sponsoring the crippled children attention. Drs. Frank Goodwin and Felix Miller are the surgeons in charge of the crippled children and most of the operative work is done by Dr. Goodwin. The board and staff of the Masonic Hospital are interested and are cooperating with the El Paso Junior League.

Dr. Vandever fish at Guaymas and brought back a good collection of fish—stories.

The City of El Paso will probably soon have a baby clinic known as the "Dr. J. A. Rawlings Baby Clinic." Over 7000 dollars have been subscribed toward this project. Dr. McCamant city health physician, has the matter entirely in hand and will see that the clinic is completely and modernly equipped for the purpose of handling the feeding problems of children. The clinic probably will be located in the eastern portion of the city near Alameda avenue.

Dr. McCamant again has won the award in his district for the best work done in public health and hygiene, having received it last year.

M. B. Culpepper
Pres., Las Cruces

NEW MEXICO SOCIETY DEPT.

L. B. Cohenour,
Sec., Albuquerque

Notes of the Fifty-fourth Annual Session, Carlsbad, N. M. May 6-8, 1936

The 54th annual session of the New Mexico Medical Society marked an innovation in the annals of the society in that the meeting was held jointly with that of the New Mexico Public Health Association. This brought together noted physicians and sanitarians from near and far, facilitated the work of both organizations and created a much larger attendance than if separate meetings had been held.

Registration headquarters and meetings were held in the Crawford Hotel—the beautiful "Crystal" ballroom, being for the medical sections and the scientific sessions.

The Eddy-Lea and Chaves counties medical societies sponsored and arranged an interesting and instructive program, with scientific papers by

men prominent in their respective fields. The members of the program committee were:

Drs. L. H. Pate, chairman, Carlsbad; W. F. Glasier, vice-chairman, Carlsbad; F. F. Doepp, Carlsbad; H. A. Stroup, Artesia; C. A. Russell, Artesia; C. L. Womack, Artesia; F. H. Austin, Carlsbad; J. W. Hillsman, Carlsbad; O. E. Puckett, Carlsbad; D. D. Swearingin, Roswell; C. S. Stone, Hobbs; and R. L. Bradley, Roswell.

Delightful diversion was provided by the entertainment committee in the annual banquet on Thursday night, at which Dr. A. P. Terrell, (Hobbs), acted as toastmaster. Members of the entertainment committee were:

Drs. F. F. Doepp, chairman, Carlsbad; J. W. Hillsman, Carlsbad; F. H. Austin, Carlsbad.

The banquet committee were:

Mesdames, M. B. Culpepper, chairman, W. F. Glasier, O. E. Puckett, L. H. Pate, F. F. Doepp, J. W. Hillsman and F. H. Austin.

The visiting ladies were entertained at a tea by Mrs. W. F. Glasier, at her home, on Wednesday

afternoon, May 6th, and on May 7th, Thursday afternoon, a bridge luncheon was given by Mrs. M. B. Culpepper.

The concluding session of the meeting, on Friday, May 8th, was held in the Carlsbad Cavern.

IMPORTANT BUSINESS TRANSACTED

New Members Elected: Drs. H. B. Johnson, Hot Springs; Harrison Eilers, Mountainair; and Richard D. Bartels, Socorro.

MOTIONS PASSED

That Lea County Society and Eddy County Society be authorized to combine under the name of Eddy-Lea County Society, as provided for in Chapter 7, Section 4, of the constitution and by-laws of the society.

That the secretary request the business manager of Southwestern Medicine to furnish annually, prior to the meeting of the New Mexico Medical Society, a financial statement of the affairs of Southwestern Medicine.

That the society endorse the plan proposed by the American Red Cross to establish first-aid stations along National highways.

That the society accept the invitation of the Colorado State Society for holding a general meeting in Denver, sometime in midsummer, 1937, with the understanding that such action does not in any way affect the society's affiliation with the Southwestern Medical Association.

That the three plans suggested by Mr. F. Guthrie, state director of New Mexico Relief and Security, for medical care of indigents, have the approval of the society, and the adoption of the particular plan applicable to any particular community, be left to the members in that community.

That a resolution introduced relating to the State Public Health Service be tabled indefinitely and a committee of three be appointed to confer with Dr. Earp of the Bureau of Public Health, to

work out a solution for the problem in public health.

RESOLUTIONS ADOPTED

WHEREAS, Divine intervention has ended the active practice of members of the New Mexico Medical Society during the past year, who in their passing have taken from us valuable friendships and associations,

AND WHEREAS, these physicians have left us only our memories and the deep impress they made upon patients and friends,

THEREFORE, BE IT RESOLVED, the New Mexico Medical Society in regular annual session expresses deep sorrow because of the loss which it has sustained in the passing of

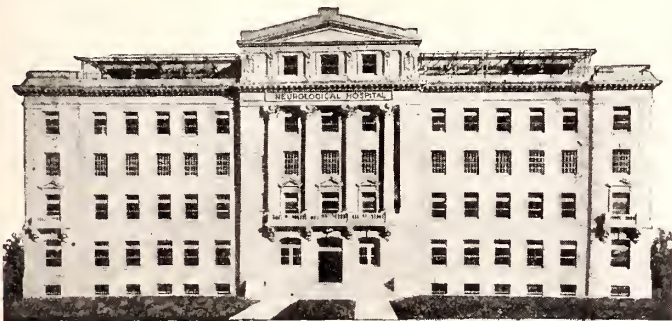
**Dr. W. T. Brown, Valmora,
Dr. W. G. Hope, Albuquerque,
Dr. W. E. Rice, Raton,
Dr. Frank H. Johnson, Carrizozo,
Dr. Dildy M. Austin, Belen,
Dr. R. L. Butler, Clovis.**

BE IT FURTHER RESOLVED, That the minutes of our meeting bear the expression of these sentiments and that appropriate indication be sent to the families of the deceased.

(Signed) W. R. Lovelace,
George T. Calvard,
E. F. McIntyre,
Committee.

RESOLVED: We, the New Mexico Medical Society, in its 54th annual session, at Carlsbad, May 6th, 7th and 8th, 1936, wish to thank:

1. The Carlsbad Chamber of Commerce for the many courtesies extended and the beautiful flowers;
2. The Daily Current-Argus for the publicity given the association;
3. The Eddy County Medical Society for the excellent entertainment;
4. The Crawford and La Caverna hotels for making their facilities available and the Crawford hotel for extending the use of their rooms for meeting places;



NEUROLOGICAL HOSPITAL

Kansas City, Missouri

Modern Hospitalization of Nervous and Mental Illnesses, Alcoholism and Drug Addiction.

THE ROBINSON CLINIC

G. WILSE ROBINSON, M. D.
Medical Director

G. WILSE ROBINSON, Jr., M. D.
Superintendent

5. The ladies of the Eddy County Medical Society for the entertainment afforded the wives of visiting doctors in the homes of Mrs. Culpepper and Mrs. Glazier;

6. The Coca-Cola Company for the Coca-Cola provided;

7. Colonel Boles for the use of the Carlsbad Caverns as the meeting-place for the last day's session.

Signed: The Resolution Committee,
Chairman, C. A. Miller, M. D.,
W. R. Lovelace, M. D.
Chas. F. Beeson, M. D.

OFFICERS FOR 1937

President-elect: Dr. G. W. Jones, Clovis; Vice-president: Dr. W. R. Lovelace, Albuquerque; Secretary-treasurer: Dr. L. B. Cohenour, Albuquerque, (re-elected); Councillors for three years: Dr. H. A. Miller, Clovis, (re-elected) and Dr. C. F. Beeson, Roswell; Delegate to A.M.A. for two years: Dr. H. A. Miller, Clovis; Alternate: Dr. W. R. Lovelace, Albuquerque; Board of Managers, Southwestern Medicine: Dr. J. R. Earp, Santa Fe; Dr. C. H. Gellenthien, Valmore, (re-elected.)

Meeting place for 1937: Clovis, N. M.

COMMITTEES APPOINTED

Necrology: Drs. W. R. Lovelace, Albuquerque; E. F. McIntyre, Santa Fe; and George Colvard, Deming.

Thanks: Drs. C. A. Miller, Las Cruces; W. R. Lovelace, Albuquerque; and C. F. Beeson, Roswell.

Medical Relief (continued): Drs. Carl Mulky, Albuquerque; R. L. Bradley, Roswell; V. E. Birch-told, Santa Fe; F. H. Crail, Las Vegas; and George Colvard, Deming.

Medical Defense (Continued): Drs. W. R. Lovelace, Albuquerque; Carl Mulky, Albuquerque; L. B. Cohenour, Albuquerque; F. F. Doepp, Carlsbad; and C. H. Gellenthien, Valmore.

Rocky Mountain Conference Meeting: Drs. H. R. Miller, Clovis; C. A. Miller, Las Cruces; and L. B. Cohenour, Albuquerque.

Public Health Conference: Drs. Carl Mulky, Albuquerque; W. H. Livingston, Santa Fe; and George Colvard, Deming.


Expressions of regret at inability to be present at the meeting were received from Drs. C. W. Gerber, president, Las Cruces, and R. L. Bradley, Roswell.

Among those present were:

Atwater, Reginald M., American Public Health Association; Austin, F. H., Carlsbad, N. M.; Atwood, C. S., Buffalo, N. Y.; Bryan, O. J., Pecos, Texas; Burch, A. J., Reserve, N. M.; Beeson, Charles F., Roswell, N. M.; Brown, A. E., Rochester, Minn.; Bauer, W. W., Chicago, Ill.; Cohenour, L. B.; Albuquerque, N. M.; Colvard, George T., Deming, N. M.; Culpepper, M. B., Carlsbad, N. M.; Cooke, Willard R., Galveston, Texas; Clark, F. A., Washington, D. C.; Cathcart, J. W., El Paso, Texas; Diver, F. C., Springer, N. M.; Dewey, L. A., Santa Fe, N. M.; Doepp, F. F.,

Carlsbad, N. M.; Earp, J. R., Santa Fe, N. M.; Evans, Leland S., Las Cruces, N. M.; Epler, Crum, Pueblo, Colo.; Foster, R. I.; Flude, J. M., Hollywood, Cal.; Gardeno, J. L., Albuquerque, N. M.; Glasier, W. F., Carlsbad, N. M.; Gorman, James J., El Paso, Texas; Goodwin, Frank C., El Paso, Texas; Hall, H. H., Los Angeles, Cal.; Hillsman, J. W., Carlsbad, N. M.; Hemphill, C. H., Tularosa, N. M.; Hensley, E. T., Portales, N. M.; Hoover, L. E., Carlsbad, N. M.; Hodde, H. W., Hobbs, N. M.; Ingraham, C. B., Denver, Colo.; Jones, George W., Clovis, N. M.; Jones, B. Logan, Fort Bayard, N. M.; Lingenfelter, G. P., Denver, Colo.; Littell, George S., Santa Fe, N. M.; Lamo, Jr., J. D., Albuquerque, N. M.; Long, Julian O., Belen, N. M.; Miller, C. A., Las Cruces, N. M.; Mulky, Carl, Albuquerque, N. M.; Meyer, J. G., San Francisco, Cal.; Mayer, Karl, San Francisco, Cal.; McAlmon, George A., El Paso, Texas; Moore C. H., Conches Dam, N. M.; McCamant, T. J., El Paso Texas; Miller, H. A., Clovis, N.M.; Mills, James T., Dallas, Texas; Martin, Charles L., Dallas, Texas; Multhauf, A. W., El Paso, Texas; Murphy, J. L., El Paso, Texas; McIntyre, E. F., Santa Fe, N. M.; Murphy, A. G., Ignacio, Colo.; MacWhorter, J. H., El Paso, Texas; Moore, John, Houston, Texas; Nash, Cleve C., Dallas, Texas; O' Rourke, Donald H., Denver, Colo.; Puckett, O. E., Carlsbad, N. M.; Pate, L. H., Carlsbad, N. M.; Peters, W. W., Navajo Agency, Ariz.; Parker, Jr., F. W., Clovis, N. M.; Paton, Donald, M., Galveston, Texas; Palmer, E. Payne, Phoenix, Ariz.; Phillips, W. W., Roswell, N. M.; Pate, H. L., Hobbs, N. M.; Russell, C. A., Artesia, N. M.; Smith, Leslie, El Paso, Texas; Standerfer, Fred W., Lubbock, Texas; Schofield, Ben L., Dallas, Texas; Scott, James R., Albuquerque, N. M.; Stone, C. S., Hobbs, N. M.; Sween-

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Dr. Paul C. Carley, specialist in venereal disease control work of the United States Public Health Service is being assigned by the Surgeon General for service in New Mexico during the late summer or early fall for a month. Requests for his services should be made as soon as possible to Dr. L. A. Dewey of the State Public Health Bureau in order that a schedule may be prepared at an early date for Dr. Carley. (New Mexico Health Officer 6:16 June 1936.)

J. D. Hamer
President

ARIZONA STATE ASSOCIATION DEPT. D. F. Harbridge
Secretary

NEWS ITEMS

Dr. Charles W. Sult, Jr., son of Dr. and Mrs. Charles W. Sult, 3008 N. 2nd St., Phoenix, was graduated from Creighton University at Omaha in June and will start his internship at the Los Angeles General Hospital about July 1st. Dr. Sult's mother was in Omaha for the graduation exercises.

Dr. Robert S. Flinn, of Phoenix, Arizona, spoke before the 20-30 club on June 2nd upon the heart and its diseases.

Dr. Taylor T. Hicks' automobile recently became extremely independent, rolled across a Prescott street, mounted a curb and slammed into a doghouse, pushing it down a steep incline into a neighbor's residence.

Dr. H. W. Hussong, city health officer of Phoenix, Arizona, and wife visited his parents in Camden, N. Y., in June.

Dr. Clarence E. Yount, Jr., son of Dr. and Mrs.

Clarence E. Yount, of Prescott, Arizona, married Miss Florence Brookhart, daughter of former Sen. Smith W. Brookhart of Iowa, June 2nd of this year. The ceremony took place in Washington, Ia., and the parents and a sister of the groom were present at the wedding. Dr. Yount and his bride are both doctors of medicine, graduates of George Washington University at Washington, D. C., in the class of 1934 and both expect to practice medicine in Prescott.

Dr. Fred E. Cooley, Jr., of Phoenix, Ariz., visited with his parents for a few days in June and then left for Fresno, California to serve an internship in the Fresno General Hospital. Fred is a graduate of the Phoenix Union High School and Phoenix Junior College and the University of Southern California. He received his M. D. degree this spring from the St. Louis University.

Dr. N. B. Durfee, city health officer of Bisbee, wife and son spent a few days in Phoenix in June. Dr. Durfee is president of the Arizona Public Health Association.

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Dr. Joseph Bank left June 17th to be gone about a month on a clinical trip visiting among other places the University of Chicago and the University of Pennsylvania.

Dr. and Mrs. A. L. Gustetter of Nogales left June 1st, for Cleveland to attend the Republican convention. Following the convention they visited New York and other eastern cities, later attending the Rotary International convention at Atlantic City, the doctor being a delegate from the Nogales Rotary club. It is rumored that the doctor also attended the Democratic convention in Philadelphia. They returned home July 1st.

Dr. E. C. Houle was a Phoenix visitor early in June.

Dr. and Mrs. Charles S. Smith of Nogales are leaving early in July for Denver where the doctor will attend the mid-summer clinical course in ophthalmology and oto-laryngology.

Drs. J. S. Gonzales and Z. B. Noon attended a clinic in Tucson recently.

The Faculty Council of the College of Medicine, University of Cincinnati on May 26, 1936, unanimously voted the James M. Stacey Award which consists of a medal and an honorarium of \$100.00 to Bernard Langdon Wyatt, M. D. of Tucson, Ariz., for significant contributions in the field of focal infection.

Dr. Jack Flinn of Prescott, brother of Dr. Robert S. Flinn of Phoenix, and Miss Geraldine Giroux were married in the St. Francis Xavier chapel Thursday morning, June 4th in Phoenix. Dr. Robert Flinn attended his brother as best man.

The Maricopa County Medical Society voted to request the city commission to pass an ordinance forbidding unpasteurized milk to be sold in the

city of Phoenix. Dr. Fred Holmes is chairman of the committee to further this activity. Cards have been printed which are given to the restaurants which handle no raw milk so stating upon the card. Also the card says the Maricopa County Medical Society disapproves the use of raw milk.

Dr. Benjamin Herzberg, who was unfortunate enough to have an automobile accident on Dec. 6, 1934, in which Margaret Owen was killed, and was sued for 10,000 dollars and judgment rendered of 250 dollars, has had the case reopened against him and will have to have another trial.

Dr. and Mrs. James Lytton-Smith are building a new home in Country Club Manor which is a tract east of the Country Club district. It is a 2-story house and will be air conditioned.

Dr. Nelson D. Brayton has announced he is a candidate for election to the Arizona House of Representatives from his district. He is also an alternate delegate to the Philadelphia convention of the Democratic party.

Dr. and Mrs. W. P. Sherrill are building a new home on their ranch south of Indian School Road near 29th St.

Dr. Gerald Lewis has resigned as assistant Maricopa county physician and has opened offices in the Goodrich Bldg.

Dr. George B. Irvine, Tempe, Arizona, is examining the babies in the Well Babies Conference some time during this month, checking the weight and height of the children brought to the clinic.

Dr. and Mrs. Howard M. Purcell of Phoenix are spent two weeks vacation during July at the Yellowstone National Park.

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BOOK REVIEWS

EXOPHTHALMIC GOITER AND ITS MEDICAL TREATMENT by Israel Bram, M.D. Medical Director Bram Institute for the Treatment of Goiter and other Diseases of the Ductless Glands, Upland, Pa., formerly Instructor in Clinical Medicine, Jefferson Medical College, Philadelphia, member of the Association for the Study of Internal Secretions, The American Association for the Study of Goiter, etc.; The C. V. Mosby Company; St. Louis, Mo.; 1936; Price \$6.00.

Dr. Bram has been treating exophthalmic goiter for the last 25 years in the belief that it is entirely a medical condition. This is a second edition appearing 16 years after the first. The author evidently has the faith of his convictions.

He holds that the disorder is constitutional and emphasizes that constitutional therapy is the answer rather than surgery and destructive radiation. Dr. Bram's book should be familiar to every person who treats goiter though he believes thoroughly in therapeutic surgery for exophthalmic goiter.

The book has 456 pages and is divided into 22 chapters. He speaks of psychic trauma as a predisposing factor in the etiology of the disease; then he discusses circulatory and nervous symptoms, types, laboratory tests, course of treatment, of rest exercises, and related measures, diet and drugs. Chapter 21 is devoted to end results on medical treatment of goiter and he gives case histories of discharged patients.

There are 79 splendid illustrations and the book has an unusually readable type.

DISEASES OF THE RESPIRATORY TRACT: Clinical lectures of the Eighth Annual Graduate Fortnight of the New York Academy of Medicine; by 21 contributors; 418 pages with 56 illustrations; Philadelphia & London: W. B. Saunders Company, 1936; Cloth \$5.50 net.

The Academy of Medicine of New York was organized more than 80 years ago. The organizers promulgated 4 objectives one of which was the cultivation of the science of medicine. The other three are: A library, scientific meetings, and the recently inaugurated course of lectures to the public. The cultivation of the science of medicine is being attempted for the first time in this volume, which offers to the profession the advances in medicine in the disease of the respiratory tract so that "the busy practitioner may be informed from authoritative sources as to the last word on a given topic."

There are 20 subjects dealt with in this volume and are by authors of whom we mention such well known names as: Maximilian A. Ramierez, Charles T. Porter, Chevalier L. Jackson, Charles Hendee Smith, James Alexander Miller, Arnold Rice Rich, David Riesman, Howard Lilienthal, and Yandell Henderson.

Every physician especially interested in chest work will find this symposium volume most valuable.

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* *Laryngoscope*, Feb. 1935, Vol. XLV, No. 2, 149-154

★ *Proc. Soc. Exp. Biol. and Med.*, 1934, 32, 241-245

N. Y. *State Jour. Med.*, Vol. 35, No. 11, 590

Arch. Otolaryngology, March 1936, Vol. 23, No. 3, 306-309

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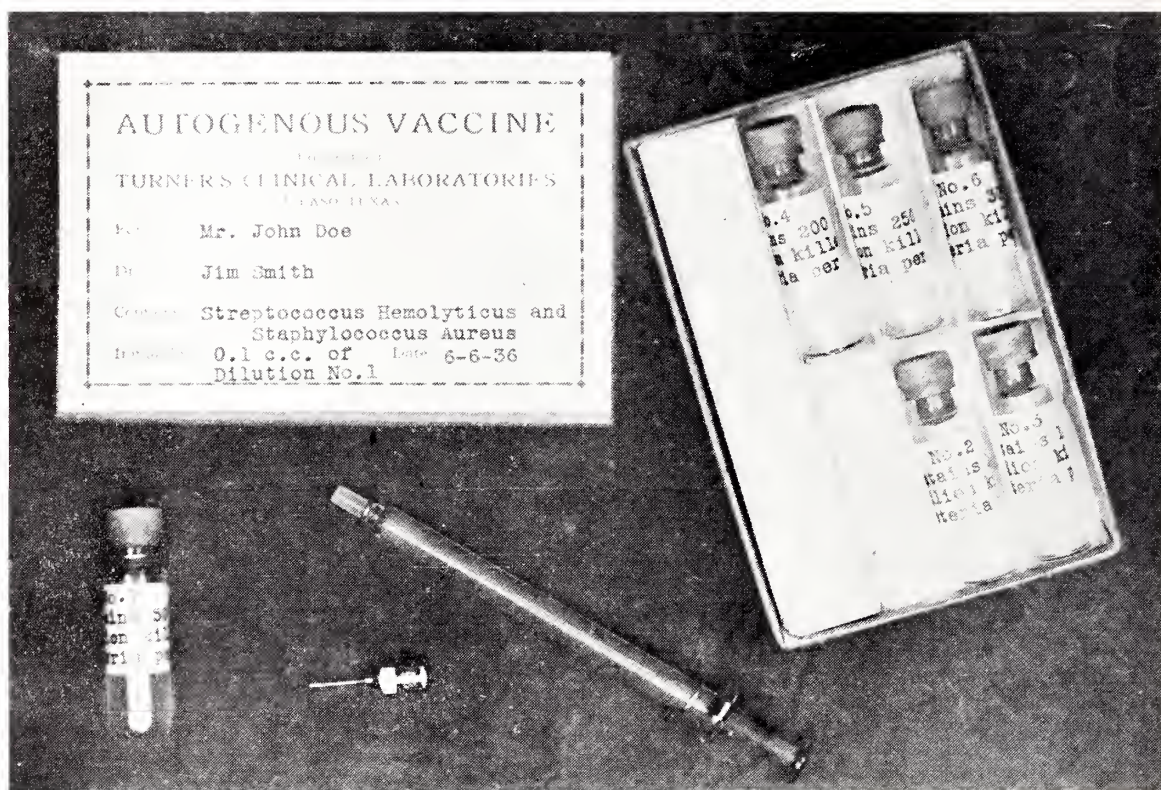
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AUGUST, 1936

No. 8

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As a result of these basic contributions, there are available today a number of excellent standardized carriers of vitamin D. Viosterol, and the fish liver oils, and their concentrates, are readily available for use in the campaign against rickets whose prevalence, especially among infants in large urban centers, still remains high. In addition to these vitamin D carriers, the vitamin D fortified or irradiated foods have appeared within recent years.

It has become increasingly evident that there are a number of compounds which may promote calcification in the various animal species. It is further evident that these compounds vary in their physiologic

efficiency with various animal species, or that they are "species specific". A number of forms of vitamin D have been postulated (4) and much research in the vitamin D field has been directed toward their isolation and identification.

In general, natural foods have never been regarded as important sources of vitamin D. The commonest food articles show extremely low antirachitic potencies when measured by conventional methods. However, recent evidence has been offered that the contribution of vitamin D made by a varied diet of canned foods may be more significant than has heretofore been supposed (5). While common foods admittedly cannot supply the high demands of infancy and childhood or other phases of the life cycle, for vitamin D, it would appear that they may supply significant amounts of the vitamin to the diet, especially in the case of the adult human, concerning whose quantitative vitamin D requirement comparatively little is known.

Biological research has shown that canned marine products such as salmon, shrimp, and oysters (6) make a small but definite contribution of the antirachitic factor to the diet. We desire to direct the attention of our readers to these interesting facts about canned foods in general, and these canned marine products in particular.

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- (1) 1924, J. Biol. Chem. 61, 405
(2) 1924, J. Biol. Chem. 62, 301,
(3) 1932, Ann. 492, 226
(4) 1935, Physiological Reviews 15, 1-97

- (5) 1934, Ind. Eng. Chem. 26, 758
(6) a. 1935, J. Home Econ. 27, 658
b. 1933, Science, 78, 368
c. 1926, Wis. Agr. Expt. Sta. Bul. 588, 124

This is the fifteenth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



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Southwestern Medicine

PUBLISHED MONTHLY

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In diarrhea, "The sugar is added gradually conditions admit, some sugar other than milk sugar or cane sugar being used, preferably dextrin and maltose."—H. E. Small: Diarrhoea in bottle-
feeding, Maine M. A. 12:152-158, Jan. 1932.

In diarrhea, "Carbohydrates, in the form of dextri-maltose, well cooked cereals or rice, usually can be handled without trouble."—B. B. Jones: A discussion of some of the commoner types of infantile diarrhea, and the principles of the diets used in their treatment. 1920.

"The most desirable sugar because of all the sugars maltose is least objectionable."—A. I. Blau: The use of protein milk 119:352, April 2, 1932.

Concerning the treatment of diarrhea, "If the weight remains stationary, it is an indication that loss of substance is occurring through the stools, mostly in the form of alkaline salts. To equalize this loss of substance, the diet must be increased, but in such a way as to avoid causing fermentation. This may be done by adding dextrin-maltose and preparations of protein to the food, increasing the calories until the infant is taking 160 calories per kilo. of body weight."—H. L. Rowntree.

Nutritional disturbances, *Arch. Pediat.*, 41:771 Nov., 1924.

of being able to feed mixtures of protein and carbohydrate to infants with diarrhea. The professor, Finkelschtein, said that the use of protein like a food containing 12 calories to the ounce, instead of the infant's usual diet of 10 calories to the ounce, is apparently, in addition, the only way to avoid the danger of dehydration on a starved diet, like Dextro-Malose, 1 or No. 10. To the professor, it is important to safely add the further advantage of bringing the infant up to a basal level of carbohydrate additions very quickly, enables one to avoid the result that many children on a starved diet of collapse. The suggestion, he said, was added to Toronto, Canada, that the percentage of sugar added to protein mix, that is, the percentage of sugar added to protein mix, should be greater than the percentage of protein added to the carbohydrate mix. He emphasized that adding carbohydrate to the protein stools, that regard less of the carbohydrate mix, within a reasonable time, will avoid collapse. "—G. J. Finkelschtein: *Medical Clinician*, 1933, 28, 1333.

In cases of malnutrition and indigestion. The appetite improves rapidly, and the stools soon become normal in appearance, if the sugars are intelligently prescribed. By this I refer to proper proportions of dextrin and maltose. When there is a tendency to looseness, I have used a preparation known as "dextrin-maltose," for the separation known as "dextrin-maltose." Further carbohydrates; . . . —M. Ladd: Further
"At . . . digested olive oil mixture
July, 1916.

"After the preliminary short period of starvation, protein milk should be used. . . . When the diarrhoea has been sufficiently checked, dextrin-maltose may be added and gradually increased until from 1 to 6 tablespoons are being used."
—W. L. Denney: *Acute nutritional disturbances of infancy*, Univ. West. Ontario M. J. 2:132-137, April, 1932.

Regarding the treatment of diarrhea, "In our experience, the most satisfactory carbohydrate for routine use is Mead's dextrimaltose No. 1." —F. R. Taylor: "Summer Complaints," *Southern Med. & Surg.*, pp. 555-559, August, 1927.

SERIOUSNESS OF DIARRHEA

There is a widespread opinion that, thanks to improved sanitation, infantile diarrhea is no longer of serious aspect. But Holt and McIntosh declare that diarrhea "is still a problem of the foremost importance, producing a number of deaths each year. . . ." Because dehydration is so often an insidious development even in mild cases, prompt and effective treatment is vital. Little states (Canad. Med. A. J. 13: 803, 1923), "There are cases on record where death has taken place within 24 hours of the time of onset of the first symptoms."

In cases of diarrhea, "For the first day or so no sugar should be added to the milk. If the bowel movements improve carbohydrates may be added. This should be the one that is most easily assimilated, so dextri-maltose is the carbohydrate of choice."—*W. H. McCuslan: Summer diarrheas in infants and young children, J. M. A. Alabama. 1:278-282, Jan., 1932.*

"If it is desired to use a preparation with a high dextrin and relatively low maltose content, as Mead's dextrin maltose."

"If it is desired to feed an unusually large amount of sugar to a baby, it is well to use a maltose-dextrin preparation, as in this way there is less danger of bringing about sugar fermentation than if lactose were used."—L. W. Hill. *Practical Infant Feeding*, W. B. Saunders Co., Phila., 1922, p. 206.

"The usually one-third milk is usually skimmed at first, and a half ounce of the **Dextro-Maltose** is added. We prefer **Dextro-Maltose** as the carbohydrate is most easily digested. . . . Preparations containing the more maltose are more rapidly absorbed, but on the other hand, are more liable to produce diarrhea. . . . Lactose, which was very popular at one time, is never used in our work. The consensus of opinion seems to be that milk sugar is often the source of indigestion in normal infants and the primary cause of fermentative dyspepsia in the primary stages."—J. I. Reading, Jr., *Artificial Feeding of the First Year*

"Protein milk may be continued for several weeks when a gradual transition to a whole milk or evaporated milk formula, which will supply about one and one-half to two ounces of whole milk to every pound of body weight, is reached. This also should finally have the addition of **dextrin-maltose** amounting to five to seven per cent." **R. A. Strong: Summer diarrheas in infancy and early childhood, Arch. Pediat. 47:344-354, June, 1930.**

diarrhea, "Dextri-maltose
ed, for they do not ferment
red and leave very little
A. Blenkle: Protein milks
Pediat., 42:743-760, Nov.,

rest to partly replace lactose by dextrin-maltose mixtures (Mead's Nos. 1 and 2). In our view cane sugar is less suitable than lactose, and if for any reason there is objection to the use of lactose, it is obtained by the addition of carbohydrates, while fat and casein are reduced. For this purpose dextrin-maltose and flour are better than the ordinary sugars, since they are more slowly absorbed and have a greater efficacy in their powers of controlling the flora in the large intestine." — W. J. Peckon, *The Flora in the Large Intestine*. — W. J. Peckon & W. G. Wylie, *Reed's Son & Co., Phila., 1930*.

For cases of fermentative diarrhea, "... the ideal plan of treatment would be to give a food of organisms thrive on) and high in protein. Calcium caseinate milk accomplishes this purpose. In our series of cases, we found it was necessary to use the casein calcium for from 5-8 days; we then stopped it and added dextrimaltose to the formula."—A. G. DeSanctis and L. V. Potter: *The value of calcium caseinate milk in fermentative diarrhea*, Arch. Pediat., 1934, 51, 107.

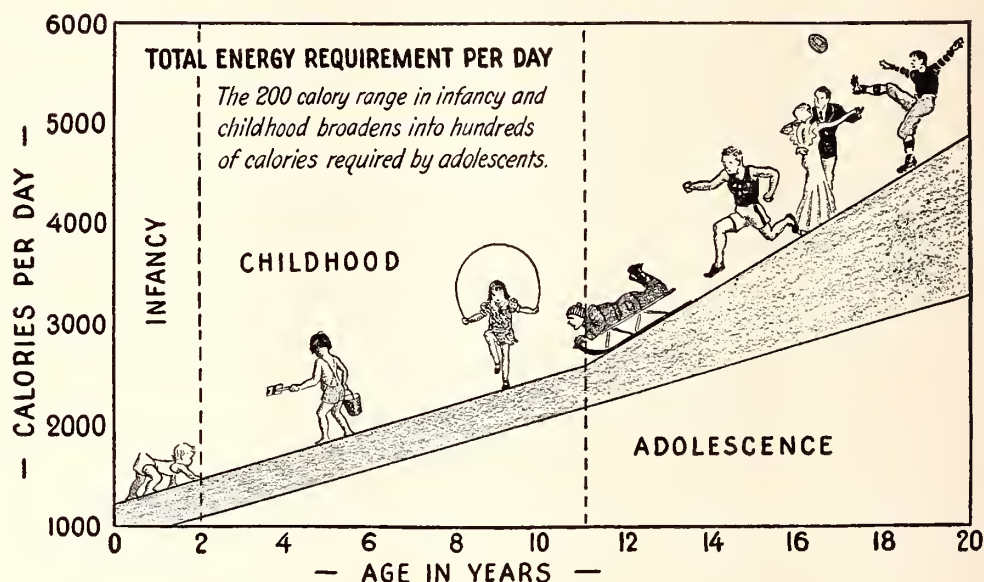
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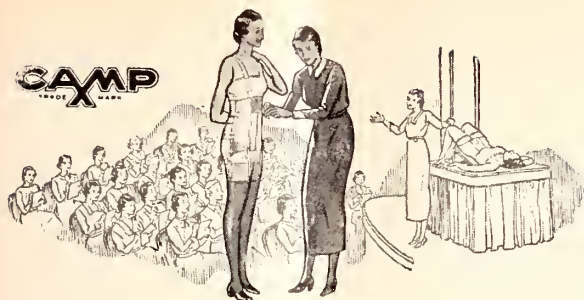
The graph reveals the sudden rise in caloric requirement during adolescence. Three hurried meals are usually insufficient to provide the tremendous caloric needs. Ac-

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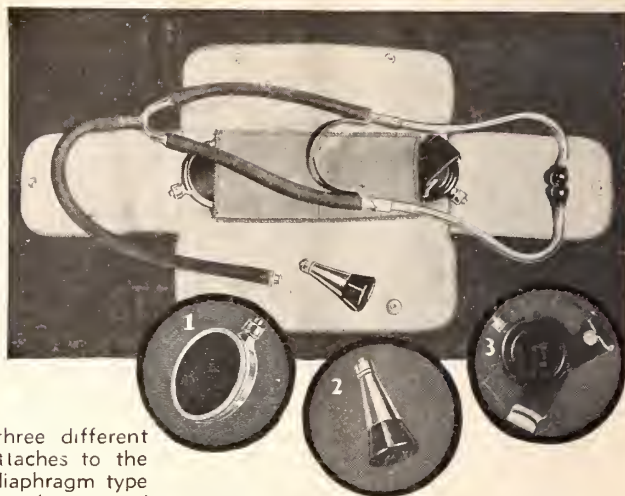
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CASE HISTORY: A. P., age 32, male, white. A plumber hypersensitive to dust; nasal mucosa chronically engorged. Observed at weekly intervals at Nose and Throat Clinic of a Philadelphia hospital.

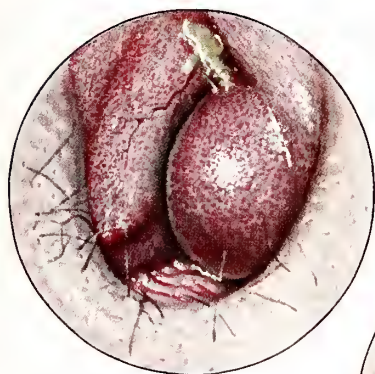


FIG. 1. Nov. 27. Nose in unshrunk state after 14 days of spraying twice daily with ephedrine, 1% in oil. Mucosa engorged, bluish, turgid and irritated; inferior turbinate blocking nostril. Marked tolerance to treatment had developed.

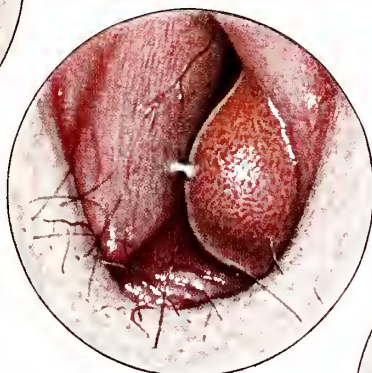


FIG. 2. Dec. 13. Nose in unshrunk state after 16 days treatment with Benzedrine Inhaler, three times daily. Engorgement reduced, tone good, irritation relieved. Note absence of atony.

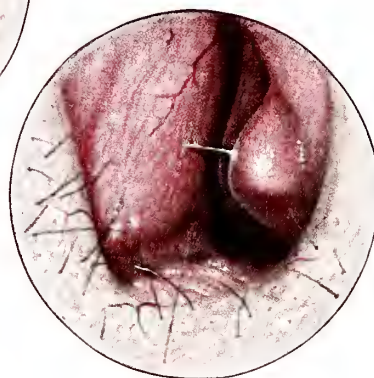


FIG. 3. Dec. 13. Nose in shrunk state seven minutes after application of Benzedrine Inhaler. High degree of shrinkage indicates no tolerance even after continued use.



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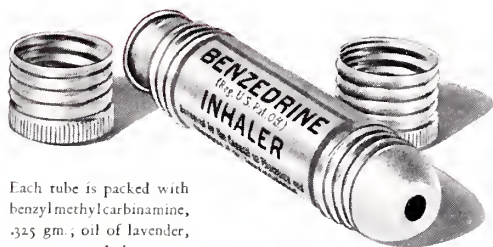
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in the treatment
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*Martenstein, H.: Syphilis Treatment: Enquiry in Five Countries, *League of Nations Quart. Bull. Health Organ* 4:129, 1935.

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VOL. XX.

AUGUST, 1936

No. 8

ANNUAL SUBSCRIPTION \$2

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Entered at the Postoffice at Phoenix, Arizona, as second class matter.

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VACCINE THERAPY OF CHRONIC ARTHRITIS

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and
R. A. HICKS
Tucson, Ariz.
(The Wyatt Clinic)

(Presented before the 45th annual session of the Arizona State Medical Association, April 23-25, 1936.)

We report results from an intravenous streptococcus vaccine with a soluble streptococcus antigen in chronic proliferative arthritis. A preliminary report was made October 18, 1933 in the Medical Journal and Record.

Foreign protein shock therapy, intravenous typhoid vaccine therapy and autogenous vaccines which have their places in the diverse and composite programs of treatment, have been discussed previously by one of us (B L. W.)

This paper is limited therefore to the vaccine therapy—in only one type of arthritis, chronic proliferative or atrophic arthritis. No attempt will be made to classify or relate other types to this treatment.

Literature: The opinions in this field have been summarized by Hench et al. The following authors may be roughly grouped as favoring vaccine therapy: Cecii, Nichols, Stainsby, Clawson, Wetherby, Burbank (autogenous), Anderson, Ryerson, Hoover, Crowe, Young, Thomson, Pemberton, and about 20 others including ourselves. Due to, the variations of administration of preparations, the divergence of methods in evaluating results drawing accurate conclusions from the literature is impossible. According to the authors mentioned, improvement follows the use of vaccines in certain patients.

The number of authors who wholly condemn vaccines in arthritis is surprisingly small:

Minot, Ellman, Kinsella and Congdon approximately complete the list.

In 1933 and again in 1935 Miller summarized opinions of internists, bacteriologists and immunologists and concluded in part: "(1) The not infrequent, brilliant therapeutic results which seem clinically to follow vaccine administration justify the belief that vaccines do have a role in the comprehensive treatment of the arthritic patient. The specific indications for the use of vaccines, their optional dosage or method of administration, etc., are still open questions. At the moment it would appear that vaccine therapy in chronic arthritis is largely limited to the atrophic form, and has little, if any, application in the hypertrophic type. (2) The concensus of opinion inclines to the view that the mechanism whereby improvement occurs under vaccine administration is in some way related to a desensitization process rather than to the formation of specific antibodies. In harmony with such a conception, small doses of vaccine are most advocate, given preferably intravenously, and continued over a long period of time, avoiding pronounced constitutional reactions."

Selection of Patients for Vaccine Therapy: The diagnosis must be made of the kind of arthritis present. Tuberculous, luetic, gonorrheal, and other specific arthritides are ruled out. We emphasize the classical picture of gonorrheal arthritis as typical and dependable. The monarticular rapidly ankylosing major joint involvement is considered gonorrheal until proven otherwise. The multiple involvement of smaller joints resembling rheumatoid arthritis is never considered gonorrheal until proven so.

When satisfied that we are not dealing with a specific infectious arthritis, the problem is the differential diagnosis between the proliferative or atrophic type and the degenerative or hypertrophic. This differentiation is

based on general considerations such as the age of the patient, mode of onset, clinical course and apparent relation to foci of infection. Physical findings differentiating the two types are well known. Suffice it to say that warmth, redness and contractures are rare in the true unmixed hypertrophic type and are the outstanding features of the atrophic type. Elevated sedimentation time, positive streptococcus agglutinations, and (frequently) secondary anemia support the diagnosis of proliferative or atrophic, arthritis.

Rarely do clinical results from removal of foci of infection and cultures indicate that autogenous vaccines should be used. More often a long history of migratory and progressive arthritis apparently unaffected by the removal of the foci points to the allergic character of joint involvement with minute and possibly diffuse upper respiratory infection by streptococci. It is often impossible by laboratory procedures, skin tests or any clinical phenomena to prove this allergic hypothesis but if such a picture is present clinically and if the sedimentation rate is high, i. e., more than 30 mm. Westergren in one hour and the streptococcus agglutination reactions low, i. e. $1/320$ or less, then we administer vaccine. A further indication for intravenous vaccine is the prompt allergic response manifest after removal of foci. The above criteria have been found of value in a significant number of patients and are relied upon regardless of the fact that certain workers believe there is no index of the therapeutic value of vaccines.

The theory of the action of vaccines is highly speculative. It is probable that desensitization is the predominant function desired. It has been shown that skin sensitivity of rabbits to streptococci may be reversed by intravenous administration of streptococcus vaccine. In unpublished work R. A. Hicks demonstrated that in rabbits definite desensitization to streptococci is not accompanied by a rise in agglutinating antibodies. By contrast, in the human subject, the administration intravenously of streptococcus vaccine elicits an antibody response in about 80 per cent of cases. Unfortunately there is no true guide to bacterial desensitization in the human subject. Skin tests, blood tests and clinical reactions may give general guidance by which to assume that desensitization is occurring, or has taken place,

but we have no direct dependable test of desensitization to bacterial protein. This does not apply to desensitization to bacterial toxins. We, therefore, administer vaccines intravenously empirically for desensitizing.

Another theory of the action of vaccines is especially important. In the essential tissue changes of proliferative arthritis there are 2 definite pathological processes. The primary one is the true proliferation in the synovial membrane and in the connective tissue and endostum of the epiphyseal marrow. The secondary tissue changes are periarticular fibrosis, cartilage erosion, tendon contractures, etc.; of the great list of therapeutic agents used in treating arthritis few are directed toward a reversal of the process through which the primary tissue changes begin. The hope in vaccine therapy lies in the possibility that it may so alter the host character that the basic process of arthritis may be halted. The majority of all other measures, omitting removal of foci, blood transfusions, and rest, are directed toward the relief of symptoms which arise from fibrositis.

The antigen is prepared by the biologic division of a well known **pharmaceutical house**. The principle of serial washings from massive cultures of streptococci is used to prepare the filtrate. To each c. c. is added 500,000,000 killed, non-hemolytic streptococci.

Doses of 0.2 c. c. up to a maximum of 2.0 c.c. at five day intervals is varied according to individual reactivities.

At 6 to 8 weeks intervals checks are made of sedimentation rate, serological responses and the clinical changes.

No control group is employed, but whenever possible, a preliminary period with all other therapy is contrasted with the later response under antigen treatment. To illustrate: Few patients spontaneously develop agglutinating antibodies to either non-hemolytic or greening streptococci in the absence of antigenic stimulation. Other treatment is attention to foci of infection, rest, heliotherapy, dietotherapy and physiotherapy.

Results: Since 1933, 240 patients have been treated with this vaccine. Over 2000 sedimentations and agglutinations have been studied. In the majority of instances, agglutinations, the diminution of sedimentation rate and clinical improvement occurs from the 4th to the 8th

week but may be earlier or considerably later. Eighty-five per cent of the patients showed clinical improvement which was considered marked and definite and the sedimentation rate was in accord with the improvement noted. In 5% in which no improvement took place the sedimentation rate was also parallel. In other words, the sedimentation rate definitely and precisely corresponded to clinical improvement. The remaining 10% were either not improved or the condition remained little changed. Eighty per cent of the entire group of patients treated showed an antibody response. Agglutination titres for streptococci obtained levels as high as 1:5000. The average peak of agglutination titre was consistently slightly higher for hemolytic than for greenish streptococci.

In analyzing the patients who did not improve in this series 50% had agglutinating antibodies.

Full statistical data of the laboratory and other changes induced in the patients studied can not be given here.

Conclusions: Since vaccine therapy alone was not employed in this series we do not conclude that vaccine alone is responsible for the improvement obtained. Vaccine has a definite place in the treatment of arthritis patients. The mode of action of vaccines is indicated and a method of selection of patients is outlined.

DISCUSSION

C. S. KIBLER: Chronic atrophic arthritis probably should not be considered infectious until we have more convincing evidence.

The rationale of specific vaccine therapy in rheumatoid or chronic atrophic arthritis depends on the premise that it is due in some way to infection. Almost as many well persons have focal infections as those with arthritis have. However, the consistent rise in the agglutination titre to streptococci and in the sedimentation rate substantiates the theory that infectious arthritis has an infectious basis.

It is difficult to evaluate vaccine therapy without a control series of cases. Any measure which improves the general health is likely to benefit arthritis and physicians like to give their patients every possible advantage. Heliotherapy, blood transfusions, improved nutrition, blood tonics, rest, and warm dry climates are decidedly helpful and make it impossible

to know exactly how much of the improvement is due to the vaccine.

Several years ago Wetherby and Closson treated a series of clinic patients solely with a streptococcus vaccine given intravenously. They reported improvement in approximately 80 per cent. A series of arthritic patients in an institution were given vaccine and a control group dextrose solution with little difference in results.

A soluble streptococcus antigen probably offers an improvement over the ordinary streptococcus vaccine. It is probable that the good results reported in this paper can be attributed largely to the streptococcus filtrate. It seems reasonable that chronic atrophic arthritis is due to a hypersensitivity to bacterial products and it is unfortunate that we have no way to prove it. Reagents are not present in the blood serum in bacterial allergy. Skin reactions also give no reliable information because streptococcus infections are frequent and are group reactions to streptococci. This theory is supported by the fact that arthritis is known to be caused by sensitization to foods.

The authors are to be congratulated for this contribution to the difficult problem of arthritis.

Dr. Donald Hill: There is conclusive evidence that infection does play a part in these cases. We have found streptococcicosis; how much it means I do not know. To evaluate controls is very difficult. We have tried many vaccines, with figures showing that the percentage of improvement of those without vaccines to be about the same as those with vaccines. One point I wish to emphasize very strongly is that not enough attention is paid to the general program. A specific cure for atrophic arthritis is not yet available. A striking advance in the therapy of the disease can occur if physicians will stop treating these patients half-heartedly with new remedies as they appear and frankly tell their patients what the problem of adequate treatment includes.

Dr. Thompson concluding. Thank you for the kind discussion on this subject. We are not yet in position to say what vaccine therapy actually accomplishes for these cases. We can not say that vaccine alone did this or that. We have a wealth of opinion but a poverty of data. By bringing the general treatment of these

cases to a higher level, we shall have a basis, for definite opinions as to the use and value of vaccine therapy. It is time for the medical profession as well as the victims of this disease to realize that there is no easy proven way.

MANAGEMENT AND SURGERY OF TRAUMATIC CATARACT

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(Read before the 45th annual session of the Arizona State Medical Association April 23-25, 1936)

This paper deals with traumatic cataracts with ruptured capsules. The other group has no penetrating injury to the lens.

A capsule wound causes lens opacity. Lens fibers, contacting the aqueous, are permeated by it and swell and cleave into layers. With an injured posterior capsule the vitreous supposedly acts the same as does the aqueous. In as much as the vitreous is retained by the hyaloid and the lens is completely surrounded by aqueous, it seems more probable that the aqueous is responsible for the clouding of the lens. Injury to the anterior capsule in young individuals is apt to produce complete opacification of the lens in a short time. Often the swelling is so rapid that the lens fibers project into the anterior chamber with a fur-like edge. Occasionally, this type produces an acute hypertension.

In favorable cases, the lens may disappear completely by gradual absorption so that the pupil becomes clear and black with spontaneous cure of the cataract. This is especially true in children. The posterior capsule remains and often produces a secondary cataract requiring operation. In most instances absorption comes to a stop before the entire lens is absorbed due to closure of the capsule wound. In individuals over 35, the nucleus being sclerosed, complete absorption does not occur.

There is a tendency for the posterior capsule and the hyaloid to regenerate so that wounds of these structures tend to heal rapidly. Minute openings in the anterior capsule also may

seal over with little opacification. This type is seen where a small sharp foreign body enters the lens. The capsule may heal over so that only a small opacity following the path of the foreign body remains especially if from an inert substance. Small wounds behind the iris are particularly favorable as the iris becomes adherent to the wound and aids early sealing off.

A soft cataract undergoing resorption often has minute deposits, resembling the precipitates seen in chronic iridocyclitis. These, however, are essentially different, being small rounded fragments detached from the swollen lens and adherent to the posterior corneal surface.

Certain complications are frequent in traumatic cataracts.

Acute infection may follow penetrating wounds of the eye usually with panophthalmitis and loss of the eyeball.

Iritis is also common, frequently due to infection, although in instances it must be regarded as the direct result of trauma to the uveal tract. In some eyes the lens substance is apparently irritating. Such inflammation not controlled, leads to proliferation of the capsule (so-called cataracta accreta), posterior synechia and occlusion and seclusion of the pupil, with restoration of vision difficult.

Acute hypertension, due to sudden swelling of the lens and its subsequent extrusion into the anterior chamber, is another complication frequently encountered. This occurs especially in young individuals with large wounds of the capsules. I have seen this acute hypertension develop in a child of 11 years the day following an extensive injury to the capsule.

The character of the injury, the age of the patient, whether or not a foreign body is present and the amount of damage to the uveal tract, determine the prognosis.

The **prognosis** in traumatic cataract as a rule, is unfavorable if any of the above complications are present. It is good, however, in simple cases, especially in children where the lens substance may go on to absorption without surgery. In older patients, the lens does not absorb readily and comparatively small wounds may result in iridocyclitis or hypertension. A certain percentage of the cases lose vision from iridocyclitis or, even the globe from panophthalmitis. In a penetrating injury

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of the eyeball, sympathetic ophthalmia also must be kept in mind.

In the medical treatment local therapy is important. In recent cases, the conjunctival sac should be carefully cleaned and gently lavaged with a mild antiseptic such as metaphen 1-5000. Atropine keeping the pupil well dilated prevents posterior synechiae, and should be used in spite of a possible increase in tension. Hypertension can be controlled by evacuation of the lens and is preferable to occlusion of the pupil. When posterior synechiae are present in the early stages, and where atropine will not break them or dilate the pupil well, 1 per cent suprarenin bitartrate often will. After anesthetizing the conjunctival sac a drop of 1 per cent suprarenin bitartrate is instilled. Repeat in 5 minutes and again the following day if necessary. A small amount of whiskey given in advance prevents general reactions.

In patients who are sensitive to atropine, scopolamine 0.1% or even 0.2% may be employed.

Dionin 3 to 10 per cent solution, or even in the powdered form, is an effective analgesic and aids absorption. In as much as some patients are extremely sensitive to dionin, I first instil a drop of one per cent dionin to determine the degree of sensitization.

In the early stage, ice compresses control swelling but later heat is more beneficial.

A protective bandage is placed over the wounded eye; if the wound is large, bandage both eyes for a few days.

Systemic treatment is valuable in preventing complications. Because of the possibility of infection and iritis, I have been using typhoid-paratyphoid vaccine intravenously as a prophylactic measure. The usual dose is 25-50 million organisms intravenously—depending upon the age and weight of the patient. Because of disagreeable experiences following this procedure, we have recently used the method outlined by Lindner where the vaccine is given prophylactically.

On the first day, 5 million organisms are given intravenously, and 2nd day 7 million, the 3rd day 9, and the 4th day, 10 million. The shock is not nearly as great and the fever is almost as high. I am convinced that the prophylactic use of typhoid-paratyphoid vaccine has saved many eyes.

"Omnadin" (Metz) is a sterile solution of protein obtained from non-pathogenic bacteria (*sarcina* and *B. mycoides*) combined with various animal fats and lipoids from bile. Action also is to increase the non-specific immunity of the body. It is given intravenously—the average dose for adults being 2 c.c. This can be given daily with no anaphylactic or accumulative effect, and no risk of overdosage. It is not attended with the disagreeable general reaction of typhoid vaccine and therefore may be used in ambulatory patients. It is not a substitute for typhoid vaccine but is an aid to or substitute for typhoid when contra-indicated.

With iridocyclitis salicylates are valuable and can be given in daily dosage of a grain per pound body weight. If a reaction develops, discontinue them for a few days.

The surgical treatment of traumatic cataracts must be varied according to the indications and is used in conjunction with medical treatment. During the inflammatory stage, acute hypertension is the indication for surgical interference. Without lens substance in the anterior chamber, paracentesis frequently suffices. This should be done with a Graefe knife; if not effective, extraction may be necessary.

In glaucoma with lens substance in the anterior chamber extraction is indicated. In individuals under 35 linear extraction is the operation of choice. Over 35, because of sclerosis of the lens, the usual cataract operation should be performed. Under retrobulbar anesthesia the operations are without pain. Extractions in acute hypertension have few post-operative complications and usually do well. This is borne out recently in dinitrophenol cataracts with acute hypertension.

Where lens opacities or remnants interfere with vision surgery is indicated after the acute traumatic symptoms have subsided. The protective vision obtained and the elimination of the blind side are of sufficient benefit to the patient to warrant surgery. If the inflammation has been severe, especially in cases of membranous secondary cataract with occlusion of the pupil, surgery should wait 1 to 2 years.

The disadvantages of discission are well known. Linear extraction, as usually done, has certain disadvantages such as prolapse, incarceration, and injury of the iris. If an

iridectomy is done the eye is disfigured. Several years ago Otto Barkan again called to our attention a method that eliminates most of these disadvantages.

Shortly before starting the operation 0.1 to 0.2 c.c. of adrenalin 1/1000 is injected subconjunctivally above and as near the limbus as possible. A marked dilation of this area of the pupil results except occasionally.

Incision, made with a keratome, is corneal and about 2 mm. from the limbus and almost parallel to the corneal plane. This produces a valve-like opening which is promptly sealed as soon as aqueous reforms. The greater the intraocular pressure the more firmly is the posterior lip of the incision pressed against the anterior. As the incision is in front of the dilated iris and the wound closes quickly there is no tendency to develop iris complications.

Through this incision capsule forceps are introduced and a large piece of anterior capsule removed. Should there be lens substance in the anterior chamber but a small opening in the capsule it may be advisable to enlarge this.

Depress the scleral edge of the corneal incision slightly with a spoon and the soft mass will slide through the gaping wound. Gently stroke the cataract from below upwards with another spoon against the cornea and the remainder of the lens substance will be removed. Lavage the anterior chamber with half normal saline at body temperature to wash out small particles not removable by the spoon. It is important to make certain that the lips of the wound are clean before closing.

Traumatic cataracts in individuals over 35-40 are best removed in the usual manner. The technique used in the division of ophthalmology of the University of California Medical School seems to give us the greatest possible security.

Two important factors, probably the 2 greatest steps forward in recent years which determine the success or failure of the operation, are adequate anesthesia of the globe and satisfactory akinesis. The anesthesia is obtained by instillation of cocaine in the conjunctival sac, accompanied by retrobulbar injection of 2 c.c. of 4% novocain to each c.c. of which has been added 1 drop of adrenalin (1:1000).

With a 4 cm. platinum-iridium needle punc-

ture the skin at the lower temporal border of the orbit. The needle is pushed along the floor of the orbit, for almost its entire length, bringing its point nasally behind the eye in the region of the ciliary ganglion. The plunger is gently withdrawn to be sure a vessel has not been entered. Inject the novocain slowly. In 4 to 8 minutes complete anesthesia of the entire globe results. A hypotony further guards against vitreous loss. For akinesis 2 per cent novocain with adrenalin is used in the usual manner.

My associate, Dr. Horner, developed a method of controlling the lids by sutures. The lid edges are injected with 2% novocain. White silk sutures are introduced through the upper lid margin in 3 places. The suture ends clamped with a hemostat are easily controlled by the assistant producing a "tenting" of the lid. A single suture adequately controls the lower lid. This method avoids a possible hurried removal of a speculum and the lids can be closed or opened by the assistant or surgeon. The danger of pressing the lid hooks against the globe is eliminated. Patients may close their eyes for a few minutes after the incision or after the iridectomy.

The superior rectus suture useful in certain cases is placed before the incision. It is easily removed afterward.

The conjunctival flap method is always used. The conjunctival suture is placed immediately after the incision and a wide loop left well out of the way. This suture can be used to lift the corneal flap to facilitate iridectomy or iridotomy and the introduction of the capsule forceps, and is dropped back in place after the instrument is in the anterior chamber.

The method of extraction may be either the extra- or intra-capsular depending upon the operator and the case.

With small healed capsular wounds, and no absorption, the intracapsular operation is preferable, especially if complicated by post synechia. In these the zonula is weak and, after post synechia have been separated by a thin spatula, little difficulty is encountered in removing the lens by the intracapsular method. Membranous or shrunken traumatic cataracts can often be extracted successfully by this method.

Secondary cataract is a frequent complica-

tion of traumatic cataract. The simple type can be taken care of by discission in the usual manner.

With dense membranous secondary cataracts, particularly with occluded pupils, simple discission will not suffice. The following procedure is efficacious in most instances.

A corneal incision is made with a keratome near the limbus. The keratome is directed backwards so that a horizontal incision is made above the pupillary area through the iris and the lens capsule. A small pair of closed de Wecker scissors are introduced. At the transverse iris cut, one blade is placed through the wound beneath iris and capsule and at right angles to the first iris incision. The other blade is in the anterior chamber. The scissors are closed, and cuts vertically at right angles to the iris incision leave a clear pupillary area. Slight vitreous loss is not serious. Convalescence is usually uneventful. There is little tug on the ciliary body and, consequently only slight reaction.

Occasionally patients with traumatic cataracts have large corneal wounds. These were formerly cared for by conjunctival flaps placed over the wounds. During the last 2 years I have sutured the corneal and scleral wounds using Kalt's corneal needles and corneal silk suture. The sutures are placed through the outer half or two-thirds of the cornea or sclera. It is essential that the lips of the wound be clean and exactly approximated. Any prolapsed iris must be replaced or excised. In young individuals particularly there is the possibility of hypertension from the rapid swelling of the lens with its subsequent interference with healing. It is often possible in these cases to remove most of the soft cataract with spoons before placing the corneal sutures. Following the spooning the anterior chamber should be lavaged. Particular care should be exercised to see that no lens particles remain in the wound. Thus it is possible to save an otherwise lost eye.

It is evident that in the management and surgery of traumatic cataract one must be guided by the indications in each individual case.

ACNE VULGARIS

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(Presented to the El Paso County Medical Society May 25, 1936.)

I discuss acne vulgaris, and not acne rosacea or the papular eruptions of acneform distribution caused by iodides, bromides, digestive disturbances, food sensitizations, tar, oils, etc.

The **history** of the average untreated case of acne vulgaris is about as follows: The eruption begins about puberty or during early adolescence; the first evidence is the comedo, or blackhead, which is a hyperplasia of the epidermis of the pilosebaceous orifice with consequent retention of sebaceous material within the duct and gland; there is usually an accompanying seborrhea; some of these lesions remain simple comedones, others develop peri-follicular inflammation varying from a small papule to the large suppurating and cystic lesions of acne indurata; with healing there is usually scarring, varying with the grade of inflammation and the scarring tendency of the individual; this process, involving the face, chest or back, usually subsides at about 19 to 21 years of age. Some cases last longer and some are of shorter duration.

The **etiology** of acne vulgaris is not fully understood. There seems ample evidence that disturbance of the hormone balance associated with puberty forms the base on which the disease develops.

B. acne has been thought to play a part with staphylococci responsible for the pyogenic element. The role of each of these organisms is open to question.

Certain cases are aggravated by anemia, digestive disturbances, constipation, and the ingestion of iodides or bromides. Iodine is in certain foods and in iodized salt, and bromide is a constituent of certain compounds used in the baking of bread.

Altho cases have been reported by Cleveland White¹ of a papular eruption of acneform distribution which were apparently associated with specific food sensitization, these were not cases of true acne vulgaris. It is possible that an occasional case of acne vulgaris is influenced by specific foods, but this is unimportant in the average case.

The x-ray is the most dependable **treatment**. The optimism formerly held has given way to a more guarded prognosis. It is not the method of choice in every case. Michael² in an excellent review and evaluation of treatment stated that the cures with x-ray approximate 80%. Selection of cases will, I believe, raise this figure. Adolescents do not as a rule respond to x-ray as well as do older cases, and should receive other treatment first. X-ray must be given expertly and cautiously, erythema carefully avoided, and the total quantity of radiation kept within the limits of safety.

It would be well here to mention the scarring which occurs following the healing of deep acne lesions. There is a belief prevalent among the laity, and unfortunately among many physicians, that the pits are caused by x-ray treatment. There is no foundation for this belief. The scarring is a result of the destructive inflammation, and occurs with or without x-ray treatment.

Ultraviolet radiation, whether from the sun or from quartz lamps, is likely to be of benefit if given in large doses, tho the results are often only temporary. I have repeatedly seen cases of acne vulgaris improve during a stay at the beach, to recur again when the patient returned to school or other indoor occupation.

Proper local applications will accomplish a great deal in most cases, and will cure some. Such treatment is especially applicable to cases from 12 to 15 years of age.

Attention to digestive disorders and constipation is always indicated, but in many cases where benefit might be expected, none is observed. Elimination diets should be tried in the cases which do not respond, but as a rule they accomplish nothing. Restriction of carbohydrates is customary, and occasionally beneficial, although there is no evidence of faulty carbohydrate metabolism.

It is always well to restrict the use of iodized salt, and in cases where the patient has been using iodine or bromine in any form large doses of pure sodium chloride should be given daily, for it is known that chlorine tends to replace iodine and bromine in the tissues.

Anemia should be corrected. Iron, cod liver oil or viosterol, and brewer's yeast are indicated for patients who are under par. Staphylococcus bacteriophage and vaccines appear to

be of benefit in cases where there is a severe pyogenic element. Otherwise they are practically useless.

In the last few years various endocrine substances have been employed. This seems a step in the right direction, but the results have been disappointing although an occasional case is much benefited. In the present state of our knowledge it must not replace other treatment. In my own experience the cases which have been most benefited by hormone therapy have been women well past 20 years of age. In one case, in which the anterior pituitary-like sex hormone was being given with definite benefit, the treatment had to be discontinued on account of loss of weight and nervousness. I have seen no other untoward results.

SUMMARY

Acne vulgaris is a syndrome, the basis of which is probably some as yet poorly understood imbalance of the sex hormones.

Other factors, local and general, influence the disease. Each case therefore must be studied individually, and treated accordingly.

The large majority can be permanently cured by intelligent treatment. A few will resist all treatment.

Scarring is a result of the pathologic process, and not of treatment.

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INTRADERMAL USE OF ALUM PRECIPITATED TOXOID

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The necessity of reducing the handicaps in mass immunization against diphtheria with the usually recommended dosage and method of administering alum precipitated toxoid, led me to adopt a method hinted at in the literature as probably effective, but not recommended. My experience with the intradermal reduced dose in antityphoid immunization, carefully checked by laboratory procedure, removed all hesitancy to adopt the same idea for immunization

against diphtheria. Alum precipitated toxoid was administered intradermally in a single dose of 0.1 ml.

Two groups of children totaling 148, ranging in ages from 8 months to 15 years, and located in widely separated areas were selected for observation. These were carried through two readings of the Schick test—60 hours and 130 hours after administration. The test was used exactly 6 weeks after administration of toxoid. The children were not "schicked" before being "toxoided", and were representative of the "mill-run" of preschool and school children encountered in a general campaign of diphtheria immunization. The use of the Schick test before administration of the toxoid was purposely eliminated as being expensive in time, material and labor and, therefore, impractical in extensive immunization work.

Of the 148 children, 95.95% were Schick-negative and 4.05% Schick-positive. In the latter the second readings always were decidedly more positive than the first. Of the 148, 8.10% showed a proteid reaction which had either disappeared or was decidedly more faint at the second reading. In one child a superficial abscess following the toxoid dose, was reported, and this child gave a negative Schick test, and did not react to proteid.

The objections to the subcutaneous method and dosage: The cost to health departments of the subcutaneous method and dosage, considering waste in handling, is about 15 cents per 1 ml. dose. The retail price is about 40% more. It is time consuming. There is waste of material, since a great deal of it is rapidly eliminated without having opportunity to excite formation of antibodies. The local reaction is decided and uncomfortable in a large percentage, and the formation of deep abscesses, painful and of long standing, is prone to occur. If there exists proteid sensitiveness in the individual, constitutional symptoms are likely to be marked. Because of the inevitable occurrence of constitutional symptoms from either proteid sensitiveness or the toxoid proper in adults, one hesitates to use it in persons shown to be Schick-positive, and need and ask for protection. The injections are painful and in children of impressionable age engender fear for future contacts. To the average private patient—family with three or four children, the

cost of material plus the fee for administration is almost prohibitive; therefore health departments are importuned to serve persons outside of their obligations to the indigent class.

Advantages of the Intradermal Method and Dosage: The cost for material is one-tenth that of the subcutaneous method—about 1.5 cents for the 1 ml. dose: the retail price is 40% more. The method is quick. There is no wasted material since it is absorbed slowly and every bit of it used to excite the formation of antibodies, and the amount injected seems sufficient to produce a negative Schick reaction in a comparatively short time. There is very little local and no constitutional reaction. If an abscess occurs, it is superficial, not particularly painful, and if evacuated, heals quickly and without disfiguring scar. If proteid sensitiveness exists it is manifested locally, and not constitutionally. Fear is not engendered in the young child, because the injection is not particularly painful when carefully done. It can be administered to those of late adolescence and to adults without constitutional or marked local reaction. We have demonstrated this, and do not hesitate to use it whenever necessary. The method should appeal to the general practitioner whose clientele deplores the high cost of immunizing material. A method of extending this service more generally probably will suggest itself to him.

COMMENT

How long the immunity will be maintained by the use of this method should be determined. This is almost impossible, since the opportunity and advent of acquired immunity occurring most any time is ever present, and will color the results beyond recognition and value.

HOW CAN WE REDUCE THE DEATH RATE FROM CANCER?

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(Prepared for the 56th annual meeting of the New Mexico Medical Society May 8-11, 1936.)

The 2% annual increase in cancer deaths in the United States is a challenge to the medical profession and to the public health departments

which cannot be ignored. The opinion prevails in certain minds that this increase is due entirely to improved facilities for diagnosis available today; this is questionable. If instead of actual death rate as a guide, we use the incidence we might well claim that this increase is due to better diagnostic facilities; but it is hard to see that each year there has been an increase of just 2% in ability to diagnose this disease. The ways by which this death rate can be lowered deserve consideration and I present it for your thought under two headings: Research and education.

Research has two separate divisions: First is the investigation of the nature of the disease from the laboratory and experimental side. This is a most fascinating approach to the cancer question and offers immeasurable opportunities for speculation. In the U. S. several laboratories have devoted their entire attention to this question. In the Rockefeller Institute in New York, under the direction of Dr. James Murphy, the work has been confined largely to experiments with the Rous chicken sarcoma and with other tumors occurring in fowls, and has given many interesting and important results. Under the direction of Dr. Stanley Reiman, at the Lankenau Hospital in Philadelphia it was discovered that certain chemicals containing sulphur and hydrogen have the definite effect of stimulating cellular growth. They saw an important clinical application of this discovery to the healing of chronic, indolent ulcers, etc., and lost no time in placing this on the market, with the result that the sale of this compound has provided funds with which to continue their research.

Laboratory research also approaches the subject from the biological side. Maude Slye, C. C. Little and many others have used the spontaneous tumors in animals such as rats and mice in their experimental work. In studying problems of heredity mice offer the opportunity of observing many generations in the life-time of one observer, since mice of 1, 2 and 3 years of age correspond to men of 40, 70 and 100 years. Mice have men's kinds of tumors, breed early and have comparatively large litters, are inexpensive to keep and have other advantages for cancer study. Maude Slye's painstaking observations of many generations of mice deserve much commendation, even if her conclusions have been doubted. The

work of Dr. Little in Bar Harbor, carried on for over 25 years, instead of using the observation system, started with the premise that if through inbreeding most of the variables could be eliminated, one could form more accurate conclusions regarding the heredity of cancer. This research indicates at present that cancer of the breast is transmitted, not through the chromosomes as had been previously thought, but through the cytoplasm of the female egg cell. This discovery came through crossing a female in which the spontaneous incidence of cancer was observed to be approximately 50% with a male, whose cancer incidence was 0.1%. The resulting generation developed cancer of the breast in about 39%. With crossing a female from a low cancer of the breast incidence, with a male from a high breast cancer incidence, the resulting generation developed breast cancer in only about 6%. This investigation is still being pursued.

Lacassagne painted theelin, chemically related to the dibenzanthracene compounds, on the skin of male mice who never develop breast cancer spontaneously; local irritation and hyperplasia with cancer of the breasts resulted. The cause was through systemic development and not through local influence since it was not painted on breast tissue. This may be an important observation in the clinical use of theelin, and while no one has yet announced that it is dangerous it certainly should be used with caution. Another observer has recently announced that, in a strain of mice with a high incidence of spontaneous cancer of the lung, painting the skin with theelin increased the incidence of lung cancer.

Clinical research certainly cannot be considered less important than laboratory research. For many years observers have treated cancer cases, studied sections of tissue, and signed death certificates without keeping accurate records or materially adding to the knowledge of the disease. Now the picture has changed. Over 250 fully approved cancer clinics exist in the U. S. today; groups of interested physicians are daily treating cases and carefully observing and recording the facts. In a few more years we shall have a mass of valuable clinical data. Many more such study groups should be formed.

The second method by which we may hope to lower the death rate from cancer, consists

in education, both of ourselves as physicians and of the general public. Many physicians graduated before the development of modern methods of treatment. When I graduated the treatment of cancer in any location was almost entirely surgical. Many of us have had little or no opportunity or demand to increase our knowledge of the treatment of cancer, since average practicing physicians have the opportunity of treating only 2 or 3 cases per year. If each physician in the U. S. knew only half the amount concerning the treatment of cancer that he knows about the treatment of other diseases, the death rate from cancer would be definitely lowered. In many of our large hospitals where ultra modern methods of treatment of other diseases are in constant use, we see physicians doing radical surgical operations to cure late carcinoma of the cervix; we see partial and incomplete operations for the removal of cancerous breasts; many things are being done which should not be—in the light of modern knowledge. Great pessimism exists in the minds of many concerning the possibility of trying to change the level of medical knowledge possessed by physicians; but I am not of this opinion. I believe that if a method could be found by which physicians could be instructed in modern methods and facilities for modern treatment provided, we would get hearty cooperation from the vast majority of the doctors.

The American Society for Control of Cancer is helping in this endeavor through the use of films and projectors supplied free of cost to groups of physicians requesting them. We shall eventually have a complete library of films on all phases of the treatment of cancer; the film on cancer of the breast is the only one now ready.

Lastly we must consider education of the public that they may learn the early warnings of cancer and consult their physicians early. Various methods of doing this have been tried; that we have met with a measure of success is evident from the number of early cases coming for treatment. That more early cases have not come is often from lack of cooperation of physicians. Certainly no one can deny that the effort is worthy; merely because we seem to be confronted with an insurmountable wall of difficulties is no reason for not making the effort.

Various objections such as "creating cancer-phobia;" will do no good if radium and x-ray are not more readily available, and many others have been raised, mainly by physicians. To the latter, we agree in part, but if a start is not made we shall never make headway in this great battle.

The president of the New Mexico Medical Society has appointed a cancer committee to do what it can in this state to lower cancer death rate. If each physician practicing in this state would personally contact a member of this committee and offer to do his part in his own community, as directed by this committee, it would not be long before we would have better facilities for diagnosing and treating cancer, and soon we may point with pride at a death rate going down instead of up.

The public health department can distribute literature, give public health talks, collect statistics, educate public health nurses regarding early symptoms and get patients to physicians in time; all can be done without creating additional departments or adding much work to any individual.

TREATMENT OF POLLEN AND OTHER INHALANT ALLERGY

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(Presented before the Southwestern Medical Association
Nov. 1935.)

Inhalant allergy may arise from pollens, animal emanations, miscellaneous substances such as cottonseed, kapok, flaxseed, cottonseed, pyrethrum, orris root, house, feed, grain, and other occupational or environmental dusts, and spores of a multitude of fungi. They may be air borne and produce allergy, especially after repeated inhalation of excessive amounts.

The treatment of inhalant allergy is of great importance because of its many manifestations. It is often associated with food and less frequently with drug and bacterial allergies. Hay fever, bronchitis, asthma, chronic or recurrent nasal colds or congestion, recurrent or chronic sinus congestion leading to sinusitis or polypsis may arise. Much chronic conjunctival congestion and vernal catarrh arise from animal emanations, house or occupational dusts and other miscellaneous allergens complicating pol-

linosis. Inhalant allergy moreover is responsible for much eczema. It plays an increasingly important role as compared with food allergy as age increases. The inhalants are absorbed through the naso-bronchial membranes and carried to the sensitized cells of the cutis by the blood. Allergic toxemia may result from inhalants, especially pollens—originally reported by Kahn in children and emphasized by my work in adults. Weakness, fatigue, and depression may be the chief result. Occasionally gastrointestinal symptoms, recurrent or chronic headache, and rare cases of epilepsy result from inhalants; cardiovascular disturbances including hypertension and anginal attacks may be primary or secondary results.

Successful treatment depends necessarily on accurate diagnosis. This demands a carefully taken history and the use of various tests. All information indicative of manifestations of allergy in the family or personal history should be included. A detailed study of the presenting symptoms should be recorded and an analysis of the diet and environment from the allergic viewpoint must be made. The patient should be tested first with the scratch method with all food and inhalant allergens which are ingested or in the environmental air. Thereafter intradermal testing should be done with 1-200 dilutions of glucose, saline, or glycerine extracts of all important inhalant allergens which have not reacted by the scratch method. In the absence of reactions, 1-50 dilutions of glucose or saline extracts may then be used.

That approximately 10 to 20% of patients who fail to react to skin tests have inhalant allergy stresses the value of a well taken history and has encouraged the introduction of the conjunctival, nasal, and intra-bronchial tests to determine mucous membrane sensitivity. With such tests, moreover, the clinical evaluation of slight or indefinite skin tests is possible. The final determination of the activity of the allergens in the etiology of the symptoms usually depends on the results of prolonged treatment. When history indicates probable causes, the choice of inhalant allergens for desensitization or avoidance must be based on previous experience. The successful control of any allergy requires recognition of all existing sensitizations—inhalant, ingestant, contactant, and bacterial. Poor re-

sults too often are due to failure to recognize associated allergies and to appreciate that treatment cannot be determined solely by skin reactions.

Environmental control: Immediate results to a large extent depend on environmental control and on air free from pollen and dust. Air filters may be necessary. Patients may need to sleep in rooms with hard wood or painted floors, on which are washable rugs. Linoleum may be used but those with extreme sensitization to flaxseed may be disturbed by it. In the absence of cotton or kapok sensitizations, and with sensitization to feathers or animal hair, floss or cotton mattresses and pillows may be used. Sensitization to cotton often is associated with kapok allergy which, however, may exist alone—even in the absence of skin reactions. In such cases, the mattress and pillows are best covered with loose slips of a thin rubberized sheeting. Several sheets or pads should separate the body from rubberized covers because of their tendency to cause perspiration. Some persons are even affected by the lint from the finest cotton thread and fabrics; in such cases linen in the absence of flaxseed allergy may be advisable. An open spring mattress, wooden or metal furniture and clean cotton curtains should be used. Thereafter the floors, walls, ceilings, fixtures, window shades, furniture should be wiped down thoroughly on all sides with damp cloths. This is important even in pollen allergy, since pollens deposited in the house during the pollen season are in house dust. Bedding should be well-washed cotton blankets unless marked allergy to cotton exists. During cold weather old well-washed woolen blankets devoid of fuzz are advisable. With wool allergy desensitization may be beneficial. The patient's room, of course, may be heated to allow the use of cotton bedding.

For individuals markedly sensitive to inhalants, a sitting room and working environment prepared in similar manner as the bed room may be advisable until desensitization is established. Attention must be paid to air borne inhalants from nearby yards and houses. Pollens from adjoining flower gardens, trees and shrubs must be suspected. Emanations from dogs, cats, chickens, or other animals nearby may cause difficulty. The effect of sitting in

theaters, public rooms or automobiles, in which dust control is not adequate must be kept in mind. Emanations from the clothing of friends or relatives, especially when made of wool or silk and from cosmetics may produce symptoms. Certain children and adults are so sensitive to inhalant allergens that attendance at school or mingling with people is impossible until desensitization has been established. Commercial or home made mechanisms which force air through adequate filters remove practically all pollens and dust from the air and afford patients much relief. All who enter the patient's room should wear clothing to which no definite allergy exists in the patient. The precautions and control of inhalant allergens may be modified according to the degree and type of allergy in the patient, especially as desensitization is achieved.

Desensitization: Tolerance to inhalants occasionally establishes itself naturally as is the case with food allergy in a few individuals. Usually inhalant allergy tends to become more severe with sensitizations to increasing numbers of pollens, animal emanations and dusts. This emphasizes the importance of continued and persisting efforts toward desensitization or hyposensitization so that such allergic propensities are suppressed below the level of reactivity. At present such desensitization is generally accomplished by hypodermic administration of antigens composed of extracts of various allergens to which the patient is sensitized. Black and recently Gatterdam have reported favorable results with ingestion of pollen extracts and Urbach is attempting desensitization with the inhalation of solutions of increasing strengths of the causative allergens.

— In our work 2% extracts of dry pollens, animal emanations, fungi and other miscellaneous allergens are made with Unger's 5% glucose solution containing .5% phenol. Dusts, hair, feathers, feeds, and other similar substances from the patient's environment may be extracted with the same solution. After filtering through a Buchner apparatus, sterilization is effected with a Berkfeld or Seitz filter. Glucose extracts are as stable as those containing glycerine; they are easier to draw through fine needles, are not productive of pain or necroses. ~~croses.~~ X

The allergens included in the therapeutic

antigens depends on the following criteria: Allergens which are actually inhaled in various environments by the patient should be selected; with negative reactions this information may offer the sole basis for selection of antigens; those which give skin reactions must be given special consideration; and those to which mucous membrane, and not skin sensitization exists as determined by history, or conjunctival and naso-bronchial tests may be included.

For the preparation of pollen antigens, the physician must have accurate botanical surveys of the patient's district. A recent summary of the Southwest was published by Sellers, and previous surveys of separate districts in this area have been prepared by Watson and Kibler, Phillips, Lamson and Watry, Balyeat, French, Key, Hubrey, and Black. Since pollens blow hundreds of miles, the flora of distant areas from which prevailing winds come is important since the pollens from such regions may be in sufficient concentration to produce symptoms. Pollens of unusual types when near patients' homes and from cultivated flowers in the house or nearby gardens may be important. This makes a study of the patient's neighborhood by the physician of definite importance. Pollinosis may continue throughout the year because of pollens in the dust of homes, automobiles, vehicles, and public buildings.

When reactions to several or many pollens of the same botanical family occur, desensitization may often be obtained by treatment with the most important pollen of such family. Thus one grass pollen, one artemisia, amaranth or franseria pollen may protect against those of closely related species. Satisfactory relief, however, frequently depends on treatment with pollens of all important species to which sensitization exists and which are inhaled. Desensitization to tree pollens necessitates inclusion of practically all which are inhaled even in moderate amounts, and to which allergy exists. The same is true of the pollens of cultivated flowers when symptoms arise therefrom. Pollinosis, I repeat, may occur without scratch or intradermal skin reactions. This places a premium on mucous membrane tests and history. Desensitization to animal emanations, orris root, cottonseed, kapok, pyrethrum, and other miscellaneous allergens again necessitates specific therapy. Thus if a patient is sensitive to

horse, cattle, cat, and dog hair, wool, chicken, and duck feathers, it becomes necessary to make an antigen containing all such allergens. The more allergens included in the antigen, the larger the final dose of the strongest concentration should be. When special extracts of dusts, feathers, hairs, fabrics, or other substances are prepared, several of the reacting ones can be included in the antigen to be administered. When allergy to fungi is demonstrated by history and by inhalant or skin testing, extracts of those causing symptoms can be combined in an antigen with other inhalant allergens for therapy. Such fungi may be stock dry allergens or the ground dry pelts from growths on Sabouraud's plates exposed in the patient's environment. The question always arises about the number of separate inhalant allergens which can be included in an antigen. This may vary from 1 to 12 or even more. A pollen antigen for instance, may contain 2 parts of bermuda, 1 of *franseria acanthicarpa*, 1 Russian thistle, 2 mountain sage and 0.5 *atriplex hastato*, the choice depending on the degree of clinical sensitivity in the patient and the relative amounts of the pollens in the air of the patient's environment.

ADMINISTRATION OF ANTIGENS: The initial dose of an antigen varies according to the sensitivity of the patient to the included allergens. Usually patients giving large scratch reactions are more sensitive than those giving only intradermal or mucous membrane reactions. Again a larger initial dose of an antigen containing several pollens ordinarily may be given than of one containing only 1 or 2 pollens. In general an initial dose of .025 or .05 c.c. of dilutions which just failed to react by the scratch method of testing can be administered. The injections must be given just under the skin in the leg or arm where large veins are not present. The outer and upper side of the arm, posterior to the mid line is a favorable area. Intravenous injections are dangerous. Therefore after the insertion of the needle, the plunger should be gently drawn back and if blood enters a new injection must be made before administering the antigen. X

Our strongest solution is a 1-50 extract of the allergens; 1-500 and 1-5000, and if necessary 1-50,000 dilutions are prepared therefrom. When marked scratch reactions are obtained,

treatment out of season is usually begun with a 1-5000 and at times with a 1-50,000 dilution. Coseasonal therapy necessitates smaller doses and great care with increases. Treatment is usually increased by .025 to .1 cc. If local reactions are larger than three to four inches in diameter or if exaggeration of symptoms occurs, slow progress is necessary. The treatments may be given every 1 to 7 days according to the tolerance of the patient. If marked local reactions occur, subsequent treatments must be delayed until subsidence of reactions. The maximum dose depends on the amount necessary to desensitize the patient. Some obtain relief with doses of a 1-5000 or even a 1-50,000 dilution. Usually, however, from .1 to .5 c.c. of a 1-50 dilution, or from 2000 to 10,000 Noon units of each important pollen is necessary for protection, the size of the dose varying with the actual amount of the specific pollens in the air. The determination of adequate doses therefore, can be gauged somewhat by atmospheric pollen counts. If 5 to 8 pollens are included in the antigen, a final dose of 1 c.c. or even or more of the 1-50 dilution may be required; if 1 or 2 pollens are in the antigen a dose of .3 to 1 c.c. may suffice. If such maximum doses do not protect the patient during the season, larger doses must be reached the following year before the season begins. After the season starts it is usually necessary to reduce the dosage to prevent general reactions. The injected pollen added to that inhaled is too great for the patient's tolerance. It is well, however, to continue injections of as large doses as the patient can tolerate during the season and to continue such therapy thereafter every 7 to 14 days throughout the year, increasing the dose for about 2 months before the next season arrives. I favor such perennial therapy, feeling that it leads more rapidly to eventual desensitization so that the patient can be symptom free without therapy. Some still favor preseasonal therapy, however. Treatment should continue until skin reactivity practically disappears. This may require several years of continuous treatment and does not insure a cure. Prolonged therapy is justified especially when the patient can continue it himself, since without it pollinosis has a tendency to increase and cause invalidism and inadequacy.

Therapy during the pollen season is highly justified. It must not increase symptoms. Treatments may be given every day until relief has been obtained. Thereafter, the interval between injections can be gradually increased if desired and as soon as good control has occurred or the season finished, therapy can proceed according to the usual routine, continuing it through the year so that large pre-seasonal doses can be attained the following year. Phillips has obtained excellent results with intradermal injections during the season, and with preseasonal therapy. His recommendations have been followed by other allergists with excellent success.

Freeman and Duke have recommended the rush method of pollen therapy. Such therapy can only be given preseasonally or in a pollen free room during the season. The patient must remain under such conditions in the office or hospital all day and treatments may be given every 2 to 4 hours. The inclusion of 3 to 10 minims of a 1:1000 epinephrin solution with each dose and the placing of a tourniquet above the site of injection with its release for 1 to 2 minutes every 4 to 5 minutes for about one-half hour diminishes the speed of antigen absorption. Epinephrin must be immediately available. At times, maximum doses may be reached in 4 to 7 days. At other times, it is impossible to reach the 1-50 dilution without undesirable general reactions. In such patients, the rush method must be discontinued.

✓ The administration of antigens containing animal emanation or miscellaneous allergens and dust, feed, fungi or other inhalant allergens must follow the same routine as described for pollen therapy. However, it is usually much more difficult to increase such antigens without exaggeration of symptoms than in pollen desensitization. This may be due to the frequency with which ambulatory patients continue to inhale causative allergens. Because of the marked allergenicity of horse dander, silk, flaxseed, cottonseed, and glue, and other animal emanations adequate desensitization is often difficult to obtain. However, with persistent effort over many months and at times years, protection may be obtained. We have desensitized many patients to horse and cow dander, dog and cat dander, guinea pig, deer, and mule dander, cottonseed,

silk, and other similar allergens so that free inhalation of such substances has been possible without symptomatology. Exaggeration of symptoms during therapy always indicates a reduced dosage.

GENERAL REACTIONS: It is most important to warn all patients receiving therapy about the possibility of general reactions. They should be told that a local reaction is to be expected, that sometimes the dose may be slightly excessive so as to spread the reaction generally, and that hives swelling and itching of the skin, especially of the face, nasal congestion, hay fever, coughing or actual asthma may occur. Because of such possibilities, the patient should wait in the office for 15 to 20 minutes after each injection. Serious reactions arise during this time. The immediate injection of 1:1000 epinephrin in doses of from .3 to 1 cc. according to the age of the patient and the degree of the reaction is necessary and it should be repeated every 5 to 30 minutes and later every 1 to 4 hours according to the degree and persistency of the reaction. The immediate application of a tourniquet above the site of the injection reduces speed of antigen absorption into the blood. It should be released for 1 to 2 minutes every 4 to 5 minutes over a period of 30 or more minutes. If such a reaction arises after leaving the office, the patient must return immediately. He may well be provided with 1 or 2 ephedrine capsules, the ingestion of which will mitigate his symptoms before he arrives at the office.

Such general reactions of course indicate excessive dosage. The following injection must be reduced 2 or 3 doses. Such difficulty is especially prone to arise during the pollen season and as stated before, it is often impossible to increase and frequently necessary to decrease doses during such time.

OTHER THERAPEUTIC CONSIDERATIONS: Poor results in the treatment of inhalant allergy with environmental control and desensitization therapy may be due to many causes. It is most important to realize that ingestant, and at times bacterial allergy may also be present. Food allergy especially must be kept in mind with both children and adults and in the absence of satisfactory skin reactions. This necessitates the frequent and experienced use of trial diets for its diagnosis. Leucopenic index studies may be of help. Moreover, all

the causes of inhalant allergy may not be found. A constant analysis of the patient's possible susceptibility to pollens, animal emanations, dusts, and other inhalant substances than those already recognized must be made. In **bronchial asthma**, it is most necessary to appreciate the effect that retained mucus in the terminal bronchioles has on the perpetuation of symptoms. Because of this, the removal of such bronchial mucus is most important. Potassium nitrate and other smoke and various expectorants have long been used for this purpose. Recently we have described the beneficial effect of the inhalation of a vapor of 1:100 epinephrin solution on asthmatic symptoms after which mucus is often expectorated. More helpful is the intratracheal instillation of iodized oil which seems to aid in the loosening of tenacious thick mucus and to encourage its expectoration. It is possible that a plain oil may serve the same purpose. A non-antigenic vegetable oil should be chosen and mineral oil never used. Recently we have utilized bronchial lavage with a hypertonic solution in asthmatic patients as advised formerly by Stitt in patients with bronchiectasis. It is probable that a physiological salt solution is of equal value and that such lavage may replace the use of oil in certain cases. With expulsion of mucus, apparently poor results from anti-allergic therapy often become eminently satisfactory.

In **nasal allergy**, low grade or marked infection of sinuses, extensive polyposis, and structural abnormalities of the nose, infected adenoids and tonsils may interfere with results. A conservative attitude, however, toward surgery is imperative. It should only be done for obvious infection and practically never until allergic therapy for a prolonged period has been carried out. Frequently rapid relief from nasal occlusion or congestion arises from an elimination diet, environmental control or desensitization therapy in the presence of definite polyposis or roentgen ray indications of infected sinuses. In nasal cases, the examination of nasal secretions for eosinophiles or pus cells often aids greatly in the diagnosis of the relative amount of allergy or infection in the patient.

In **cutaneous allergy**, the persistency of skin lesions from long standing sensitizations is im-

portant to keep in mind. Moreover, the effect of superimposed bacterial or fungoid infections, or of mechanical irritants and scratching, and the help to be obtained from skillful dermatological therapy must be remembered. I lay less stress on neuroses as a cause of dermatoses than do Becker and Stokes. Nervousness with its associated manifestations is more apt to be a result rather than a cause of allergic dermatoses. The frequency of bacterial and food allergy in the etiology of urticaria and angioneurotic edema is especially important to remember.

Finally it is imperative to discover all active pathology of all types in the patient being treated for inhalant allergy. Foci of infection and diseases in the gastrointestinal and urogenital tracts must be recognized and emphasis must be laid on the maintenance of health with proper rest, bathing, exercise, and a balanced nourishing diet of adequate mineral, and especially vitamin content. Keeping all of these ideas in mind, however, the final control of allergy ultimately depends on the discovery and proper treatment of all specific allergenic causes.

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THE TREATMENT OF HEART DISEASE BY THE GENERAL PRACTITIONER

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(Prepared for the 45th Annual Session of the Arizona State Medical Association, April 23-25, 1936.)

It seems unfortunate as one authority stated that heart disease has become a specialized field to large extent out of general practice. Sir James MacKenzie always contended that the general practitioner by reason of his familiarity with the habits and history of the patient was able to detect the earliest signs of disease. The general practitioner by reason of his close contact and supervision also is in a much better position than the specialist to carry out the treatment of heart disease.

Unfortunately, however, the general practitioner is often hampered by the traditional impression that digitalis, and digitalis alone, is

sufficient for the treatment of most cases of congestive heart failure. So firmly implanted is this tradition that digitalis is used in all forms of heart disease regardless of type and many times to the exclusion of other remedies frequently necessary to restore compensation.

Therefore, if the general practitioner accepts responsibility of treating heart failure he should be painstaking and thorough, utilizing all available therapeutic measures. In few other conditions can the skill and judgment of the physician be so accurately gauged by the response of the patient to medication.

In many cases of congestive heart failure complete bed rest, restriction of fluid to 1000 to 1500 c.c. daily and digitalis are sufficient to bring about satisfactory diuresis with marked amelioration of symptoms. To be effective digitalis must be given in such amounts that full effect is obtained in from 36 to 48 hours. This can usually be accomplished by giving one cat unit ($1\frac{1}{2}$ grains of the powdered leaf) per 10 pounds of patient's weight. If the drug is discontinued when certain toxic manifestations such as loss of appetite, vomiting, colored vision, mental depression and confusion appear the patient may obtain the maximum benefit from digitalis without danger.

Contrary to most authorities it is my impression that the average patient suffers from inadequate amounts of digitalis rather than from overdosage.

Unfortunately, many patients fail to react to the treatment outlined. The edema persists and its removal becomes more of a problem than the treatment of the underlying cardiac condition as the following case illustrates:

A Colorado rancher age 55 had congestive heart failure, following hypertension for 5 years. For a year he had dyspnea on exertion, fatigability, and muscular weakness. For 3 months he had moderate edema of the ankles, swelling of the abdomen and cough. His local physician had given him digitalis in adequate doses, but had not restricted his fluids, nor enforced bed rest. Examination showed orthopnea, cyanosis engorgement of neck veins, marked edema of the extremities, and free fluid in the peritoneal cavity. Heart rate was 76, and regular. Fluoroscopic examination showed congestion at both bases. The heart was aortic in config-

uration, markedly enlarged in all diameters, especially in the region of the left ventricle. There was super-ventricular dilation and marked unfolding and tortuosity of the aorta. His urine had a slight trace of albumin, but no red blood cells. He was immediately given intravenously 2 c.c. of salyrgan diluted with an equal amount of distilled water. During the next 8 hours he passed 3000 c.c. of urine, the edema of his extremities disappeared and there was marked diminution in the size of the abdomen. Thereafter, he was given 5 enteric coated tablets, $7\frac{1}{2}$ grains each, of potassium nitrate 4 times daily. He continued to receive $1\frac{1}{2}$ grains of digitalis 3 times daily. He improved markedly. Evidence of congestive heart failure disappeared and he was able to be up and around the house. From time to time he suffered from dyspnea and precordial pains which were relieved by theobromin calcium salicylate, $7\frac{1}{2}$ grains, 3 times daily after meals. At the end of 10 days swelling of the ankles again became noticeable and thereafter, he was given 4 doses of salyrgan 2 c.c. per dose intravenously every 5 to 9 days. He became edema free and returned to his home in a few months in moderately good health. This case illustrates that digitalis may not be effective in cardiac decompensation.

Some types of cardiac failure are apt to show marked edema. Hypertension with normal rhythm is frequently associated with marked edema. These patients more than others show dramatic responses to mercurial diuretics when used with ammonium or potassium nitrate in massive doses. Moreover, dramatic improvement in the patient's condition may be obtained over and over again; I have observed no bad effects from the long continued use of these diuretics. Although most authorities state that the patient's tolerance toward mercurials should be tested by an initial injection of 0.5 c.c. intravenously. I give 2 c.c. of either salyrgan or mercupurin diluted with an equal amount of distilled water to avoid irritation of the vein, and repeat every 2 to 7 days for an indefinite period. The xanthine diuretics, although not as effective as the mercurials or as combinations of mercurials and potassium or ammonium nitrate are nevertheless valuable in early congestive failure and as an adjunct in pronounced failure. Their effect is produced

through stimulation of filtration through the glomeruli whereas the mercurials retard absorption of fluids by the renal tubules. They may be given by mouth in the form of theophyllin, theobromine sodium salicylate or theobromine calcium salicylate in doses of from 15 to 30 grains daily for long or short periods depending upon their producing gastric irritation. For the most part they are well tolerated. Aminophyllin may be given intravenously with generally satisfactory results. Ammonium chloride, ammonium nitrate and potassium nitrate recently have come into popular use; as pointed out by Keith, potassium nitrate (7½ grain enteric coated tablet) is the preferable one, since it usually causes greater diuresis than the other drugs and is less likely to cause toxic symptoms than is ammonium nitrate. However, it is of the utmost importance that these salts be given in massive doses, as much as 150 grains daily in enteric coated tablets. Extensive clinical observation indicates that these salts are relatively non-toxic and may be given for indefinite periods, being on the alert, however, for toxic symptoms, which usually manifest themselves by the absence of diuresis after a few days administration of them. In my experience, potassium nitrate has been much more effective in producing diuresis than has ammonium nitrate, as the following case shows.

A 50-year-old white woman with congestive heart failure from hypertension recently seen in consultation had been ill for about 1 month, during which time she had been given adequate doses of digitalis, ammonium nitrate in large doses and several injections of mercurial diuretics. She was dyspneic with marked edema of the legs, abdomen, and buttocks, and probably fluid in the right pleural cavity. The x-ray showed marked cardiac enlargement, the left heart border being almost and the right entirely straight. This according to the roentgenologist suggests a decompensated heart—aortic in configuration. Potassium nitrate—150 to 190 grains daily for a period of 10 days to 2 weeks were given with an increase in her urinary output, and near disappearance of the edema—there being only slight residual edema of the extremities. It was my impression that the potassium salts together with the other measures employed was sufficient to bring about diuresis when ammonium nitrate had been unsuccessful.

Occasionally one encounters individuals who are unable to tolerate either the potassium or ammonium salts or salyrgan or other mercurials intravenously. A 65 year old male experienced a severe coronary occlusion in May. In the course of the next 2 weeks he evidently had a series of further occlusions, possibly 5 or 6 in number. Each time there was an extremely dangerous reaction. However, after the usual treatment with a theobromine derivative, digitalis, oxygen administration and morphine, he was able in 6 weeks to return to his home. He became able to be up and about his home but in November he developed generalized edema which was extremely harassing and embarrassing to his comfort. He had marked dyspnea and although he was given xanthine derivatives, ammonium nitrate and digitalis, there was but little response. A mercurial diuretic was given intravenously on 2 or 3 occasions, but the immediate constitutional reaction was so unfavorable that it had to be abandoned. Because of the failure of the medication to improve the patient he was given 4 gms. urea 3 times daily after meals with a marked increase in urinary output. Intramuscular injections of 2 c.c. of salyrgan evacuated 3500 c.c. of urine in 24 hours. He continued to take urea which with occasional intramuscular injections of salyrgan were sufficient to keep him edema free until some months later when he died suddenly from coronary occlusion.

By far the most potent diuretics are the mercurials especially when preceded by a potassium or ammonium salt. Although salyrgan has been the favorite mercurial, mercupurin recently has become popular. It is a combination of organic mercurial and theophylline. This is certainly more potent than any other diuretic and is stated to be definitely less toxic than the simple mercurial. A disadvantage of mercurials is that they must be given either intravenously or intramuscularly. Intravenous medication in many fat edematous patients is often extremely difficult especially if the superficial veins have been damaged. Intramuscular injections are frequently accompanied by irritation and discomfort. Within the last few months there has become available in this country a mercurial diuretic (mercurin) which may be administered by rectum. Mercurin is similar to mercupurin except that the

xanthine derivative theophylline is omitted. Each suppository contains 0.5 grams mercurial salt which has 2.5 times the mercury used by the intravenous route. Ammonium or potassium salts for 24 to 48 hours preliminarily greatly enhances the diuretic action of the mercurin. Recently Parkinson and Thomson reported 12 patients treated with mercurin with no toxic or irritating effects and conclude that it is a safe and effective diuretic. I have used mercurin suppositories on 4 cases. The results were satisfactory in all respects except that the diuresis was less than that obtained by mercurpurin intravenously, but was more prolonged.

Summary and conclusion: As Warfield has recently emphasized the physician should treat the patient with heart failure rather than the heart of the ill patient. The treatment of congestive failure frequently revolves around the question of the treatment of edema. Bed rest, fluid and salts restriction, with adequate digitalis is frequently not sufficient to rid the body of excess fluid. This occasionally can be done by the administration of a xanthine derivative such as theophylline. However, one must resort frequently to mercurial diuretics with potassium or ammonium nitrate. Mercurin by rectum is apparently a potent diuretic which because of its freedom from reaction and ease of administration should be employed extensively by the general practitioner.

The responsibility of caring for the patient with congestive heart failure is a grave one, and unless the physician is willing to avail himself of the most effective measures for the treatment of heart disease and the removal of fluid, the outcome may be disastrous.

DIAGNOSIS OF EARLY STRAIN OF HEARTS WITHOUT VALVULAR LESION

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Methods of determining slight cardiac inefficiency are the burden of my discourse. Much may be learned by examination of the heart, but more by the study of the patient.

To prove that many persons drive their hearts beyond the stage of efficient action calls

for no research into the medical literature nor reporting of cases; the daily newspapers give adequate evidence. A problem, not surpassed in importance by even the cancer problem, is for physicians generally to recognize hearts that are being even slightly over-taxed. The person with valvular disease usually knows it and is heart conscious and is likely to do the best possible not to over-tax his heart. The persons who have never given thought to their hearts are the ones most likely to go on and on until suddenly stopped by cardiac accidents.

An inefficient heart is usually dilated. Since hearts, like fists and noses, vary in size, it is impossible to know exactly the size any certain heart should be. Although the conformation of a thorax determines the position of the heart therein, there is no way of knowing the exact relationship of the heart's chambers to the heart's shadow. Dilation is anterior-posterior and vertically as well as laterally. A heart should not be over 12 cm. in width; one of 12 or even 11 cm. in diameter may be dilated; though hearts vary in size, shape, and position so that determining what should be normal is only possible within certain limits, the size of a heart should be ascertained as accurately as possible by all available means including fluoroscopic or x-ray film examinations. Many hearts not regarded by their owners or by their physicians as inefficient may be easily shown to be dilated beyond where circulatory efficiency is possible.

Many examinations are conducted when and where x-ray examinations are impractical, if not impossible. One must rely frequently therefore upon physical examinations: Inspection, percussion, palpation, and auscultation. My errors in diagnosing the sizes of hearts have decreased in proportion to the care I have exercised in checking the findings of one method of physical examination against those of the other three, and against the information gained by the study of the patient.

Inspection or palpation may locate the apex beat, but not always accurately, as the apex beat may seem farther out than the heart margin. Percussion and auscultation must be used for confirmation of the findings. Percussion to be of value must be extremely light, just heavy enough to be heard, (and one need only listen

for intensity, rather than pitch, changes) and perpendicular to a plane passing through the shoulder blades.

To demonstrate that the perpendicular stroke is important, percuss the rolled back of a church pew or similar object by holding the pleximeter finger in one place and strike it on one spot but at varying angles.

Auscultation will show a definite increase in intensity of the sounds when the stethoscope is moved from the left to just overlap the edge of the heart.

The systemic evidence of a slightly inefficient heart varies only in degree from those of a thoroughly decompensated heart.

Palpitation is common in even mild cardiac strain and should always be inquired about, and if the patient admits having had it an extensive investigation of the heart's work should be made.

Breathlessness may be slight and the patient may not be aware of it. He has probably done nothing to test himself in this respect and has become accustomed over long months or years to it so that he does not know how his breathing should be.

The length of time one can hold his breath gives valuable information; a stop watch is essential to test breath holding; then too those who have practiced holding their breath even with strained hearts do much better than those who have had no experience even with efficient hearts.

Edema is perhaps the safest criterion of inefficient heart action. It is easiest detected over the tibia by firm pressure for several seconds. The edema has usually existed for such prolonged periods that the tissues are firm with the liquid which is not easily pressed out of them.

Increased pulse frequency if present unless explainable by other pathology is definite indication of cardiac inefficiency. Pulse irregularities usually indicate advanced cardiac strain.

Cyanosis of lips and nails may be exceedingly valuable as an indicator of cardiac inefficiency if studied closely. Two nails on one hand, however, may vary so in pinkness or blueness that nail color is purely individualistic.

The filling of veins gives much information as to how efficiently a heart is doing its work. Dilated neck veins with the person erect unless from another cause is proof positive that the heart is being much over-taxed. It is well to have the collar loosened and to place the person horizontally in order to study the filling of neck veins. Adipose tissue may interfere with examinations of veins. All visible veins should be studied. Vein filling is much like cyanosis in being relative and individualistic but it is well to gain as much information as possible from them.

Repeated studies of a person will show variability in the findings at different times and the time of the most definite findings will coincide with periods of undue physical activity or mental stress and worry or emotional upsets, or toxemias.

No age is immune to cardiac inefficiency. Especially are children in athletics or who have been even years before in athletics likely to have definite evidence of cardiac inadequacy.

If in doubt as to whether a heart is or is not efficient, digitalize the patient and see if the supposed symptoms and signs of inefficiency disappear. Some hearts respond promptly to digitalis and rest and others extremely slowly.

When a heart has been dilated the pericardium is stretched probably never again to return to normal; for this reason digitalis may have to be relied upon more or less for the remainder of that person's life, to hold the heart to normal or near normal.

Early cardiac strain is a common condition perhaps a characteristically American disease found in large numbers of supposedly normal individuals. Because the heart has such tremendous reserve energy it often in fact usually goes on and on long after inefficiency may be easily and definitely demonstrated.

The many sudden deaths in persons leading active lives shows that the reserves have been depleted—not suddenly most likely, but gradually probably over years and years.

Summary: Slight cardiac inefficiency—slightly strained hearts—is recognizable by slight palpitation, breathlessness, increase in pulse rate, cyanosis, edema, overfilling of veins, and dilation.

TREATMENT OF ACUTE DISEASES OF THE EAR

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(Read before the 45th Annual Session of the Arizona State Medical Association, April 23-25, 1936.)

The common acute diseases of the ear are of the external, middle and internal parts.

External ear: The commonest complaint is of pruritus and watery discharge with or without secondary infection, depending upon the will power of the patient and scratching implements available—the common weeping eczema. There is no permanent cure; but saturated aluminum acetate solution is most useful with occasional exposure to x-ray, using a 70 R. dose. Calamin ointment is of service with external excoriations. Attention to diet, i. e., restriction of excessive carbohydrate intake, may help and clearing of similar lesions of the adjacent scalp must be attempted. In this and the dry form, use of soap and water must be avoided as they markedly aggravate the condition. The dry variety is treated by a mild mercurial ointment.

The commonest complications of external otitis are impetigo and furunculosis. For the former, 3% ammoniated mercury ointment and 10% silver nitrate serve well. For the latter, our ingenuity is often taxed as they tend to recur in what seems an endless succession. We prefer to allow all of these to point, aiding this by applying dry heat usually from a high candle-power light. Early incision merely adds to the pain and gains nothing in shortening the duration. A fine wick soaked in merthiolate (1-4000) aids the drainage when it has pointed. Sedatives are usually necessary, as the pain is intense. Recurrence should suggest a urinalysis and blood sugar estimation. In obstinate cases an autogenous vaccine and bacteriophage used locally have been of material service. We have not found the various preparations of tin, yeast, etc., of value.

The various moulds are much more troublesome in the tropics than in our climate, but they are frequently seen in workers around fruit, particularly apples and in those who swim in unsanitary pools. In this category are those rare cases of streptothrix and actinomy-

cosis. For the common moulds we have used equal parts of alcohol 80% and (1-5000) bi-chloride of mercury. Thymol 2% in 95% alcohol is effective but strenuous therapy. Some prefer a 1% alcoholic solution of salicylic acid. The uncommon fungus infections occur mostly in livestock handlers and appear as obstinate furunculosis, the individual lesions of which refuse to heal. The diagnosis is made from microscopic slides, or rarely from the sulfur granules if it be actinomycosis. We have seen 2 cases of streptothrix, both fatal, in which massive doses of iodides and x-ray were of no effect. New, of the Mayo Clinic reports success in actinomycosis with iodine locally, iodides internally plus x-ray or radium. The prognosis seems to depend on whether bony involvement is present, being invariably bad when occurring and fair when involving the soft tissues.

The common **acute middle ear** conditions are serous and purulent. The serous are typified by intermittent pain, redness of the drum (without loss of reflex) and retraction. The temperature is normal or slight and the bubbling noises are bothersome. It is most common after aeroplane flights where there is disturbance of nasal and eustachian ventilation. In a few hours a yellowish exudate or transudate may be seen, above which is an air bubble if the fluid does not completely fill the ear. The treatment consists in nasal shrinking plus slight inflation. If this fails to clear the condition, paracentesis under strict asepsis should be done followed by inflation to expel the fluid. Inflation or paracentesis is never done in the presence of an acute rhinitis. Obstinate cases require diet correction and the elimination of tobacco and alcohol.

Purulent otitis is always best treated by early and wide paracentesis, where possible, under light anesthesia to secure an adequate incision. In fulminating cases it is well to remember that this does not relieve pain for the mastoid is involved as indicated by the copious discharge, and fluid under tension in the cells causes pain. Most of the cases recover without a mastoid operation. The paracentesis may seem puerile as there are many who believe in letting the drum rupture. As an example of this ultra-conservatism I speak feelingly, having had a chronic ear therefrom, a radical mastoidectomy and a deaf ear. Having secured

drainage, I believe that the wick treatment and suction in the hands of a skilled nurse, or mother who has sufficient time, is the better. However, for the greatest good to the greatest number, irrigation with a sterile warm solution is best to ensure canal cleansing. There is no hard and fast rule as to when an acute otitis and mastoiditis become surgical. Each case is individual in which the clinical picture as a whole is considered, i. e., the causal disease, such as measles or scarlet fever, pneumonia or the common cold, the temperature, patient's appearance and, lastly, the local condition as shown by examination. Laboratory findings, such as blood count and x-ray are of lesser value. In general, I believe that a late operation is always preferable because of better quicker healing, though I do not hesitate to operate if conditions demand it.

The acute traumatic lesions of the middle ear are from concussion sufficient to rupture the drum, penetrating foreign bodies or attempts to remove foreign bodies. These may or may not be accompanied by hemorrhage into the middle ear. The treatment of ruptures of the drum is simple; do nothing as infection rarely occurs, unless the injury has occurred while swimming under water and almost always occurs when irrigation or drops are used.

Fractures of the skull accompanied by bleeding from the ear usually indicates a transverse fracture of the petrous. In some cases as the bleeding becomes less it is apparent that cerebro-spinal fluid is escaping. Under no circumstances is early irrigation justified, because of the risk of meningitis. If ceruminous plugs are present, they should be removed by sterile curettes. The external ear should be kept clean by sterile applicators and tincture of merthiolate. Should a fulminating otitis and mastoiditis ensue and there be no meningeal signs, we believe a mastoidectomy is indicated to ensure efficient drainage outward. The wound should be left wide open and the operative procedures done as much as possible by sharp rongeurs to escape manipulation of the fracture by hammering on gouges or the lever action of curettes. The lavage of the outward flowing spinal fluid helps to prevent inward spread of infection.

Meniere's syndrome characterized by nystagmus, vertigo of a rotary character, nausea and

vomiting, is best treated by removing the etiological factor which may be leukemia, lues, vasomotor in vagotonics, sclerosis of the internal auditory artery with resultant lack of ability to respond to quick changes of position, toxic neuritis from drugs (tobacco, barbiturates, quinine) or from focal infections (most often apical dental abscesses), multiple sclerosis, and intra-cranial growths in the cerebello-pontine angle.

The symptomatic treatment consists in absolute rest on the side to which the nystagmus is directed so that the nystagmus is not increased by looking up which the patient will do whenever spoken to.

DISCUSSION

DR. ISAAC H. JONES: Of acute conditions of the ear, mastoiditis is one of the serious omens to raise its ugly head. Let me sound a warning: Do not rush into this serious operation. Give the most careful treatment and if possible wait 2 to 3 weeks before operating. This is most difficult for in the interim the physician is carrying a load of anxiety and the patient a burden of pain. There is no set rule as to when a mastoiditis must be treated surgically. A late operation is preferable because of better quicker healing; for this reason I say delay the operation; but operate if conditions actually demand it.

One other thing: With noises in the ear think of neuroma of the 8th nerve. This is often overlooked; yet tumors of the 8th nerve constitute 10% of all head tumors.

DR. LEMMON: The otologist does not always see these cases first. More often than not it is the general practitioner who first is consulted. My advice is for the general physician to equip himself with an electric otoscope. I consider it valuable. The ear should be opened and treated early, making an early recovery possible. Personally I feel guilty when a case runs into a mastoid. My sense of guilt is the more intensified when I confess that my own son developed a surgical mastoid. Study the ear drum. Stop the use of "drops" which only make a complete mess of things. Cure the "colds" and ear troubles will lessen.

DR. H. T. BAILEY: Often we hear of some one's giving ear drops composed principally of glycerine. This is a good culture medium for *aspergillus niger*. Many times when you find *aspergillus niger* in the ear you will find that some one has been using ear drops with glycerine in it.

One of the worst things the insurance companies have to contend with in ear diseases is suppurative otitis media. If a patient has had an acute discharging ear and it has healed completely there is likely to be no need of raising the premium rate, but if the ear has discharged again after healing, the premium rate should be raised from 15 to 25 per cent.

The location of the perforation or hole in the drum has much significance also. If the hole is in the anterior part of the drum we do not consider it serious; if the hole is near the posterior wall and the lower floor, say at eight o'clock, there is more danger than if it is anterior; and if the hole is above and near the posterior wall, say at 10 or 11 o'clock, it is best not to give that person insurance.

These observations also apply to industrial cases.

DR. MARTIN: I agree that it is a good policy to await developments in mastoiditis. A delayed operation means a better healing and less opportunity for complications. A wait of 8 days, other things being equal, will be found advantageous. Do not overlook the symptoms of tenderness and dizziness and do not hesitate to operate if immediate conditions call for it. What Dr. Bailey has stated in reference to glycerine is quite true. The use of soap and water for these ears is also to be shunned. Irrigation with a sterile warm solution is best to ensure canal cleansing.

As to the use of the otoscope, I do not use one as I am all thumbs in its use. I do not subscribe to the doctor's sense of guilt when mastoiditis develops. There are too many factors to consider in assuming such a guilt. The situation is quite often beyond one's control. One naturally feels badly when he has treated the case from the start and mastoiditis occurs; however, I do not feel remiss when this happens.

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, Dr. P. H.
Director New Mexico State Bureau of
Public Health

July 9 to 11 the health officers from the 10 New Mexico districts met for their second conference—with full attendance maintained throughout the meeting as before. Dr. J. C. Mitchell, with a Johns Hopkins C. P. H. on which the ink was scarcely dry, gave us the latest scientific news. Old timers like Drs. C. W. Gerber, O. E. Puckett and James R. Scott gave us the benefit of long experience in administrative practice in the Southwest. Present as a guest was Dr. Albert Hardy of Co'umbia University who gave us valuable assistance in revising the regulations governing communicable disease, especially in regard to undulant fever.

Dr. Hardy is in New Mexico organizing on behalf of the U. S. Public Health Service a research project to determine the extent and epidemiology of dysentery in this state. The research was begun last summer and with the cooperation of Dr. L. A. Dewey, state epidemiologist, and Miss Myrtle Greenfield, laboratory director, will be continued for at least 2 more years. Dr. Hardy outlined his plans for the present summer. These include the bacteriological examination of several stool specimens from each of a number of patients in all parts of the state and intensive studies of selected communities and families to determine if possible the presence among them of chronic carriers. It was agreed that "acute

diarrhea and enteritis" be added to the list of notifiable diseases in order not only to assist in this research project but also to aid in the control of dysentery.

Changes in the regulations governing the control of communicable disease were recommended by this conference and adopted next day by the State Board of Public Welfare. Copies of the revised regulations will be available as soon as printed. The most important addition is a paragraph on the control of typhoid fever carriers.

The conference was deeply concerned by our failure to secure treatment of syphilis in its early contagious stages. The following resolution was adopted unanimously and forwarded to the secretary of the New Mexico Pharmaceutical Association:

WHEREAS the prevention of the spread of syphilis depends upon its treatment in the early contagious stage, and

WHEREAS in 3 years only 2 requests have been made to the state laboratory for diagnostic outfits for use in the early sero-negative stage, and

WHEREAS we have heard evidence that in the early stages many people seek and secure prescriptions from drug stores, and

WHEREAS it is incontrovertible that treatment secured in this way is of no value for the cure of syphilis or the elimination of contagion

NOW THEREFORE BE IT RESOLVED that this second conference of the New Mexico District Health Officers urge the New Mexico Pharmaceutical Association to take whatever steps it finds practicable to discourage and prevent prescribing by drug store clerks and pharmacists for syphilis and that they encourage all pharmacists in the state to urge upon their customers the great importance to themselves as well as to the public health of immediate medical treatment for this disease.

Another resolution thanked the New Mexico Relief and Security Authority for supplying funds to purchase arsenicals for the treatment, of those who have syphilis and cannot pay for the needed drugs.

MEDICAL ANNALS OF ARIZONA

Mental Traits and Mental Diseases of the Navajo.

(Continued from July issue)

II. Prevalent Diseases of the Navajo.

From what has been said about the life of the people, certain diseases may be expected as a natural sequel. Thus we find tuberculosis and gastro-intestinal diseases, the latter especially among infants and children, taking heavy toll in deaths and morbidity. The death rate from tuberculosis is 10 to 15 times as great as among the general population of Arizona and 17 times that of the registered areas in the United States. The death rate from intestinal disease cannot be estimated or compared, but is known to be very high. Annually, in the autumn, it takes on the proportions of an epidemic, usually in the nature of a dysentery that dehydrates and often kills inside of a week. It is interesting to note that comparatively few cases of appendicitis are encountered, while there is a frequent finding of gall-stones, kidney, and bladder-stones. Trachoma is prevalent among 20 per cent or more of the population¹. The government has had trachoma specialists in the area for a quarter of a century, with but little control of the disease. The mode of life, congested and smoky quarters without proper ventilation, conjunctival irritation incident to the desert climate, disregard for the contagiousness of the disease, and failure to get necessary medical attention, are the perpetuators of trachoma.

The Navajos are subject to practically all the diseases encountered in the white population, with a high susceptibility to some and a relative immunity to others. Diseases of childhood, such as measles, mumps, whooping cough, chicken pox, small pox and diphtheria, are endemic. Scarlet fever is rare. In epidemic outbreaks of these diseases high susceptibility is evident. I found an epidemic of mumps at a boarding school affecting 90 per cent of the children² though only one or two persons outside the school were infected. Similar experiences with other infectious diseases are recounted by physicians in the Indian service. Influenza takes a heavy toll when it reaches the reservation. Skin diseases, especially scabies, are common. Impetigo is especially prevalent among the reservation board-

ing schools and in the infant population. Pediculosis, in its several forms, is highly prevalent due to living conditions and infrequent change of clothing. Sometimes several families in a particular locality will ask relief from scabies or lice. The latter parasite they accept stoically as necessary.

The Navajos, however, do cleanse themselves. They use a bath similar to the Russian's. There are regular bath-houses, dome-shaped adobe huts with only a small door, and no further vent. Bathing is usually a social event for one or more families. In the small hut stones are heated, and the place is crowded with young and old, male and female. The males are naked except for loin-cloths and the women wear their many skirts. They stay in the bath until they have sweated to their satisfaction or are too exhausted, then with fresh water from a bucket they wash themselves. There is never difficulty in the hospital in getting them to use a bath tub. Convalescent women, and even men, try to get their clothes washed and hair shampooed before going home. The Navajos really enjoy cleanliness. Under the handicap of primitive living and dire scarcity of water, they are cleaner than some elements in large cities, and would keep as clean as any average family elsewhere had they the facilities.

Constitutional diseases—cardio-renal, the scourge of the white man today, anemias, malignancies, diabetes and allergic disease—are uncommon among them. In two years the total number I encountered can be counted on the fingers, probably of one hand. I found not a single case of true primary anemia or diabetes; one case of allergic disease, sensitive to horses, was seen in a middle-aged woman who had lived all her life on the reservation, and one case of cancer, a rodent ulcer in an old woman. Cases of cancer of the uterus or the breast are sometimes, but rarely, encountered. Heart disease, per se, is rare. It is a safe prediction that if a Navajo survives his infancy and escapes tuberculosis, he will live to a ripe old age without concern over high blood pressure, angina pectoris, or appendicitis.

Tuberculosis contributes the most to the mortality rate among the Navajos. A high susceptibility to and a high mortality rate from tuberculosis among the American Indians has

been long recognized. In "The Problems of Indian Administration," published in 1928, the incidence of tuberculosis among Indians is estimated at 10 per cent, and deaths from this disease at 6.3 per M. of population. For Arizona, where the Navajos number over 50 per cent of the Indian population, the death rate from tuberculosis is given as 15.1 per M, or 17 times the rate in the general population for 1925. Hancock⁴ claims to have found 54.9 per cent positive reactions in 450 school children given the Mantoux test for tuberculosis. Of these, the sixth grade children, ages 12 to 14, 70 per cent were positive. Before I was long on the reservation, the impression became deeply rooted that there is an appallingly high incidence of tuberculosis among the Navajos.

It would seem as if their outdoor life and the desert sun should be ample protection and this, in many instances, is true. One sees not a few adults who have recovered from laryngeal and glandular tuberculosis, and undoubtedly there must also be similar cases of the pulmonary type but this cannot be said with certainty, because the residual evidence is not so readily diagnosed. Tuberculosis is a relatively new disease among the Indians. Guthrie⁵ says: "Evidence that tuberculosis existed among the Indians prior to the advent of the white man is apparently lacking." There are a few Navajos living who remember the internment of their tribe at Ft. Sumner and they say the disease was rare in those days. Apparently they have not had time to build a racial immunity or resistance. They have not yet learned to appreciate the significance of the early symptoms of the disease. This, in part, accounts for the high mortality rate. When applying for treatment, many of them are in the terminal stages of the disease. Their living conditions and their habits undoubtedly contribute heavily to the spread and perpetuation of the disease. Guthrie says: "The major problems from the health standpoint in the Indian country are, first: tuberculosis, second: factors which are responsible for a high death rate in infants and children, and third: trachoma." This summary, in every detail, fits the situation in the Navajo country as I saw it.

The Navajos are a very fertile people and the women go through many pregnancies. Considering the appalling infant mortality, it is only through the high birth rate that they

have managed to increase their numbers. Seventy years ago there were only about 30,000 where now they number close to 50,000. As previously noted, the average family is about 5, which is appreciably above the average white family. Diseases and anomalies incident to female physiology are not uncommon. Various anomalies of menses are encountered; the menarche may be any time from age 12 to 15 and the menopause from 42 to 45. Abortions and miscarriages, induced or spontaneous, are frequent. I have often done manual removal of placentas following incomplete abortion, generally on the floor of the hogan because of difficulty in moving the patient or refusal by the family to let her go to the hospital. Not a single case of ill effect is recalled. It is left to obstetricians to explain this on a basis other than the immunity of the patient to the infectious agents of her environment. In two years work only one obstetrical case was lost and this was a hospital case. The woman went through an uneventful confinement and at the end of 10 days went home. She immediately proceeded to catch up with her housecleaning, and as it was winter, this necessitated gathering buckets of snow to convert into water. Approximately 5 days later she was returned to the hospital in a serious condition with high fever, suppression of urine, and foul discharge. The final diagnosis was puerperal sepsis with renal complications. Because the patient had run temperature early in her puerperium, it was felt she might have been infected in the hospital, an environment foreign to her constitution. In contrast, a few obstetrical deliveries, including the use of forceps and repair of perineum, were made in hogans, without loss. Complicated and difficult labors are not uncommon among them; in fact, most of the cases in my experience had complications. For instance, there was one case of arm presentation, with the presenting part in full view on first examination; another case of acute hydramnios when a hydrocephalic anophthalmic monstrosity was delivered after the medicine men had labored over the patient for a week, and many other lesser complications. Government physicians see only a small per cent of the labors; they are generally called only when there is serious trouble.

The remark has been heard from visitors to the reservation, persons of intelligence and ed-

ucation, to the effect: "These people must be rotten with venereal disease." The Navajos are not rotten with venereal disease; certainly not as rotten as certain elements in the general population, and certainly less so than the dregs in the white fringe of the Navajo reservation. The incidence of venereal disease, making allowance for living conditions and for neglect of care of active cases, is comparatively small, except in neighborhoods of many mixed breeds and of close proximity to white settlements. Guthrie³ in 1929, wrote: "Venereal disease is a factor of serious importance on relatively few Indian reservations. It constitutes a problem where groups of Indians have money to spend and are in close contact with elements of the white population where vice is rampant, and where, generally speaking, law and order are difficult of enforcement or are not maintained."

An analysis of 2258 Wassermann tests, 1763 at a non-reservation boarding school and hospital⁷, and 495 at a boarding school on the Navajo reservation, casts light on the situation. Of the 1763 there were 633 non-school patients with an average age of 27 years, the youngest 5 and the oldest 85, grouped into 467 northern and southern Pueblos, 101 Navajos, and 65 unclassified representing in small numbers several tribes from other localities. For the Pueblo Indians 18.2 per cent were positive, Navajos 11.88 per cent, the others 15.38 per cent. These Wassermanns were gathered between January, 1932, and August, 1933, from a fairly large Indian service hospital with an active outpatient department, and represent only a part of the attendance for the period, including suspected cases; hence the actual per cent for the respective groups is probably lower. These figures bear out Guthrie's observation. The figures for the Navajos are probably much too high, since most of them are referred cases from reservation hospitals; hence they are not representative of the population. It is my experience that there is a relatively low incidence of syphilis in the adult Navajo population.

A low incidence of congenital syphilis generally indicates a correspondingly low incidence in the adult population, and vice versa. This seems true of our findings. Of 1130 Wassermanns on students with an average age of 15.8 years, there were 386 from the Pueblos

with an incidence of 4.34 per cent positive, 151 "others" 4.636 per cent, 489 Navajos 1.636 per cent and 122 Hopis 1.639 per cent. The Hopis, though they live in pueblos, are located within the Navajo reservation and their opportunities for contact with white neighbors are only slightly greater. Of 495 Wassermanns on students with a probable average age of 10-12 years at a reservation boarding school, there were only 0.4 per cent positive, or 1.016 per cent for the combined Navajo students of 489 and 495. For tribes other than those mentioned, a communication from the Surgeon General's office in 1933, without specifying whether the figures were for or included children, gave the incidence of positive Wassermanns as 15 per cent for the Red Lake Indians in a survey of 1,275, and six per cent for the Cherokee Indians in a survey of 1,080. The superintendent of the Crow Creek Indian agency states that of 450 Wassermanns taken on the Crow Creek side there were 22 positive, or 4.89 per cent, and of 230 Wassermanns taken on the Lower Brule there were only 3 positive, or 1.3 per cent.

A positive Wassermann is usually accepted as conclusive evidence of syphilis in the particular individual. Yet, being a laboratory procedure involving fine serological reactions, including the handling of the specimen by more than one individual, errors are apt to appear in the final figures. When a large series of tests are considered, most of them single specimens, the chances of error are even greater. Of the 495 Wassermanns on reservation school children, 375 were taken the previous year. Of the latter, 7 cases were positive. All of these had some treatment, but hardly sufficient to explain that of the seven only 2 were positive when they returned from their summer vacations. Of the positives found in the 1763 group, only a few had repeats. It is safe to conclude that the incidence among Navajo school children is probably even lower than our figures indicate, and compare favorably with figures for children in the general population.

Concerning the prevalence of gonorrhea among the Navajos, Hancock⁴, who served on the Navajo reservation for some time, says: "This disease is either relatively rare or one does not see many of the cases. I have seen only 8 cases since April 1, 1932. No acute cases of gonorrheal salpingitis have been seen."

While apparently he speaks of his time with the Apaches, he undoubtedly remembers his experience with the Navajos, because he does take into account his experience with them in other diseases. I was impressed that so few cases asked for treatment. In June, 1933, I examined 511 adult males, 18 years or over, for Federal employment. There were 16 active cases of urethritis which were considered as gonorrheal, or 3.13 per cent for the group. It is possible that the actual incidence may be higher, since it was generally known to the Indians that the disease disqualified for employment.

"What is the mental make-up of the Navajo?," is a question frequently asked. The average person's conception is from the appearance of the wooden or bronze Indian which formerly decorated entrances to cigar stores—a mirthless, stolid, cruel individual. The Navajo is honest towards his own people; it is sport and justifiable to steal from a white man, but there are many who are honest even towards him, as many traders can testify. He is responsive to friendship and favors. He is not without humor and playfulness peculiarly native. He is fond of games, gambling and races, and his ingenuity in this respect seems without bounds. The Government has found it necessary to enforce stringent rules against gambling because many played away their every possession. The women are just as strongly given to gambling as the men, if not more so. Their stoicism, which so frequently impresses the casual visitor, is superficial. While, during the severe winters of '32 and '33, many complained of their hardships, even to the extent of begging for birth control instructions in order not to bring more offspring for the same lot, they really lead a rather thoughtless, happy existence. They make appropriate emotional response to adversities; the Indian patient does not just lie down and die, nor does the family accept the death of a dear one without a great deal of laceration and prolonged mourning. It is common to find parents or other members of the family parked on the steps of the hospital for days while the outcome of an operation or serious illness is in the balance.

The Navajo believes strongly in witchcraft. Not many years ago an Indian was threatened with death and had to leave the neighborhood

because he had threatened to kill by magic a certain person. He claimed to have exercised his magic with success on other Indians and when the supposed last victim died from an unknown illness, the natives were ready to kill the witch. These magic performers are usually old medicine men; occasionally a woman "possesses" special mystic power.

A search through the literature on the incidence and types of psychoses reveal nothing of a conclusive character because of the small number of cases studied. Certain general observations for the American Indians as a whole deserve mention. The incidence of committable cases, based upon the number of Indians known to be psychotic, is probably about 1:1000. One worker notes a preponderance of manic-depressives, few cases of praecox, and the greater frequency of auditory and visual hallucinations. Another states: "Our own group of patients includes a relatively larger number of schizophrenics and mentally defectives." I know of only 2 persons committed from the Navajo Reservation during 2 years of service. They were both schizophrenics; both were women. The difficulties in evaluating psychoses in Indians is apparent; their superstitions and beliefs may be crazy ideas to a white man and be acceptable normal views to the Indian.

The writer did not see a single case of paresis. Adams and Kanner⁷ claim it is an indisputable fact that general paralysis is rare among the Indians. This they consider admits the conclusions that syphilis is an American disease and that the power of the spirocheta pallida to produce paresis in Indians is attenuated, an acceptable immunologic observation if the first conclusion is correct.

Epilepsy, and various manifestations of hysteroid episodes were seen. Epilepsy is relatively common in both old and young individuals. The Indian shows great concern over this malady; he is frightened by the convulsion, believing an evil spirit seeks expression through the patient. Of the hysteroid cases there were encountered convulsions, catalepsies, anesthetics, aphonia, and inanition from long starvation. Two impressive instances are recalled. One woman about 35, married to a very old Indian, had been sick more than a year. There had been many "sings" for her

(Continued on page 317)

SOUTHWESTERN MEDICINE

Printed by THE A. C. TAYLOR PRINTING CO., Phoenix, Arizona
Published monthly for the Board of Managers of the four constituent societies.

VOL. XX.

AUGUST, 1936

No. 8

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ADEQUATE MEDICAL CARE FOR THE INDIGENT.

We believe that the members of the medical profession generally believe that their services are extremely valuable and necessary in promoting longevity and happiness of the human race. We believe also that the members of the medical profession also believe that this attention is not supplied when actually needed except in rare and unusual instances by cultists, lay persons, or anyone not thoroughly trained in the medical sciences.

If the above premise is true should not the members of the medical profession make it their solemn duty to plan that all individuals have opportunity for obtaining this attention. It would seem that such is the case.

Therefore is it not the duty of the officers and house of delegates of the American Medical Association to consider this general problem and to lay comprehensive plans for its proper solution? The special problems in each local community should be attacked by the members of the local profession.

Persons in comfortable financial circumstances need relatively little consideration as they are able, and undoubtedly prefer, to make and should make their own plans for the medical care of their families. The low income groups and indigents, however, are potential wards of the state since they are prone to become delinquents whenever their stress of circumstances is excessive.

What shall a man do when he has no money and his family is hungry or needs medical attention or both? Shall he beg? Shall he steal? Shall he use his credit providing it has not already been exhausted? We have repeatedly

heard men say that they much prefer stealing to begging; therefore, there must be an enormous amount of stealing by persons who are never apprehended.

It seems to us that the supplying of groceries to the hungry destitute belongs in the same category as supplying medical attention to the sick destitute individuals. The supplying of groceries, however, is not a problem of the medical profession except in so far as members of the medical profession are citizens, and as lack of proper food contributes to illness.

Every community or nearly every community has its destitute and so-called poor who are not able to supply for themselves the necessities of life. As a general rule the governing boards of the counties have the duty of giving to these unfortunates the things and attention including medical attention that they actually need and want.

If the medical attention given this group of individuals in a community is on a par with that obtained by those in affluence then the members of the medical profession need make no further plans; but it would seem to be the duty of the organized medical profession of a community to determine if the medical attention given the destitute individuals of the community is on a par with that obtained by the more prosperous of the community. If and when it is found to be inadequate as it usually is, not as excellent in every way as that given those in the better walks of life, steps should be taken to rectify the difference.

If the organized medical profession doesn't assume responsibility for the medical attention of the poor and the low income groups, there is apt to be, there will be, it seems to us, an

effort, and sooner or later a successful one, on the part of the lay public to do this.

The plans which the lay public will make for giving medical care to the indigents will probably be vastly different than those that the medical profession would wish and should make.

We presume that many county medical societies would promptly answer by saying that we are already giving care to our indigents; we have a county physician, or physicians, paid to do this. It is probable, although unlikely, in most counties that the county physician system is ideal. The county physician system in every instance should be at least under a careful assumed scrutiny of the county medical society.

The ordinary county physician system, it should be understood, is in reality state medicine, a fine sample in miniature of that for which so much clamoring is now being made. The proponents of state medicine, however, would include with the indigents all members of the low income groups; therefore, whatever evils there are in the present system would simply be magnified by the addition of those with low incomes.

There is no argument that would convince those who have had to rely upon the county physicians that state medicine should supplant the present system of private medical practice.

The ideal system for giving indigents the necessary medical attention would be to permit each indigent to seek attention from the physician of his choice and for the physicians to send their usual bills for such medical attention to the county treasuries for payment; this of course is out of the question.

We believe, however, that a plan must be worked out where the indigent will have choice of physicians and the physicians paid from the public treasury. In cities where there are medical institutions with teaching clinics, medical attention is given to the indigents for the privilege of their being used as teaching subjects. There is no need in such events for calls upon the county treasuries to pay the physicians.

In the plan which provides that indigents go to private physicians and be paid for their services by the county, the set-up should give due consideration to a number of points. It should be ascertained in any community how many physicians are willing to care for the indigents

at a fee which would merely include actual extra cost, or very little more, engendered by the extra work. The physicians must consider that their profit from such work is the post graduate training obtained by seeing this extra number of patients of a type who often present unusual conditions for study.

In case a physician should not care for his indigent patients to be mixed with his private patients it would be easy for him to set aside special hours for seeing them or perhaps he would prefer to see them in an entirely different office. In such an event there might be several physicians of this same turn of mind who would group together and rent space near by their regular offices so that their regular equipment could be used for giving adequate medical attention without extra expense. It might be best for the county authorities to supply clinic rooms, equipment, and technicians and for the physicians to donate their time because of the post graduate training obtained from the extra number of patients. The interesting cases could be grouped and shown at the meetings of the county medical society. In such an event everything should be arranged most conveniently for the physicians. These are details which can be worked out and which should be worked out more or less thoroughly by the organized profession.

These thoughts upon the development of such a plan are probably extremely crude. They are intended, however, to be merely suggestions and granules from which pearls may grow.

The present county physician system in most instances is seriously faulty—not because of the integrity or medical capacity of the county physicians, but partially because the county physicians are not paid living wages and with no assurance of tenure of office; change of the political complexion of the county offices practically always changes county physicians. Unless a physician so employed gives attention to his private office during his tenure of office as county physician, he will have little or nothing to live upon for several years after being dismissed from his post as county physician. Because of these facts, he usually spends as little time as possible in taking care of county patients, and as much time as possible in taking care of his private patients. He is not at fault,

we repeat, for this dilemma. The indigent patients, however, suffer.

In addition to the strictly county patient, the southwest has a class of indigent patients which most of the rest of the counties of the nation do not have. Because of the climatic advantages possessed by the southwest, a great many persons come because of pulmonary, rheumatic, sinus, and other conditions which are more amenable to treatment in a mild equable climate, or at least are reputed to be, than in more rigorous climates; and many of these persons are indigents. Until these patients have been with us a year, at least this is true in Arizona, they cannot become county charges. They therefore become charges of the community chest or welfare league, or other charitable organizations and indirectly burden the taxpayers; and this burden really belongs to the respective home communities of the various patients.

This again then offers our medical profession an opportunity, yes, a duty, to work out plans for an equitable adjustment of such questions.

None of these problems must have immediate solution and probably none of them can have, but this is no excuse for dilatory tactics on the part of the medical profession.

The point is that the medical profession must settle these questions or the lay public will settle them in their own way and perhaps without seeking advice of the profession.

STATE MEDICINE EXISTS

There is constant talk about the coming of state medicine. State medicine isn't just coming; it is here. We have had it for a long time. The states take care of the insane, and the poor, and in many places the tuberculous; the Federal Government cares for the veterans of the world war and for many others. There are many county and city hospitals throughout the country which give at least emergency treatment to many who are not poor.

We heard an address by Dr. E. H. Skinner, of Kansas City, Mo., who so ably chairmaned the committee which "put on" the recent splendid meeting of the American Medical Association at Kansas City, in which he

said that we must beware or the next medical work to be taken over by the state is the care and treatment of cancer patients. The May Bulletin of the American Society for the Control of Cancer contains an article by George C. Wilson, M. D. part of which is as follows:

"Cancer is a public health problem and as such its control becomes one of the duties of the state. The fund necessary for the conduct of such control should be met by contributions from all of the people who will be benefited. This means that the money should come from the taxpayers, from the public treasury, and the appropriation for the use of such money for any and all phases of cancer control authorized by a legislative act.

"When the people of a state, through its legislative representatives, have been convinced of the need for such legislation, certain definite advantages appear at once. In the first place, cancer control has thereby been definitely accepted as a part of the state's activities, and unless proved an inadvisable or unsatisfactory expenditure, will continue to be accepted as a permanent part of the state program. In the second place, the significance of the movement as well as the weight of authority is greater if such activity is an integral part of a state program than when it is under private auspices"

What, if anything, should be done? How shall we do what should be done? It is well that the powers that be give due consideration to the question.

DR. E. PAYNE PALMER HONORED

An invitation from The National Executive Committee of the 2nd. International Congress of Scientific and Social Campaign Against Cancer to attend this year's meeting and to present a paper came as a distinct surprise to Dr. E. Payne Palmer. A second surprise was when the American College of Surgeons asked him to be its sole representative at the Congress and to prepare a story of the College's activities against cancer. As this meant two appearances for Dr. Palmer upon the program, he at once wrote the executive committee and asked to withdraw his first paper but was refused.

Dr. Palmer therefore presents two papers before this great international audience. The first is entitled "The Incidence of Cancer among the Indians of the United States and Canada," and the second "The Activities of the American College of Surgeons against Cancer."

The Southwest, especially its medical pro-

fession, should feel signally honored in having one of its own men, a former president of the Southwestern Medical Association and a past president of the now defunct Arizona Academy of Medicine, selected to represent the entire North American continent and to give two papers at this most important second meeting of an international congress for the study of cancer.

'LIFE OF LOUIS PASTEUR'

It was our privilege recently to witness the film in which Paul Muni portrays the life of the great scientist, Louis Pasteur. To say that we enjoyed the picture is putting it mildly. That it wasn't entirely fact throughout makes it none the less the truth; it's instructive and entertaining. It is a great picture done magnificently. We were so thrilled that we sat on the edge of the seat and had to be constantly wiping the tears from our eyes and glasses in order to see the picture. To one who has read much of Louis Pasteur and has seen his photographs and the artists' portrayal of him on canvas and knows something of laboratories it was as though Pasteur himself was in the laboratory and we were living back in that day and privileged to be there with him. What was more remarkable was that the members of the audience were as attentive as were we and seemed equally as thrilled. Repeatedly did we hear our neighbors murmur, "Oh, he'll save him, he'll save him!"

Any physician or any other person who hasn't seen this film should see it at the first opportunity. We congratulate Mr. Muni on his splendid portrayal of this great character.

MEDICAL ANNALS OF ARIZONA

(Continued from page 313)

benefit; the family despaired over the outcome. After an examination and taking of the history, it was suggested to the family they try one more really powerful "sing," and we would help along with some of our medicine. Bromides alone have rarely produced such a miraculous change; the woman recovered from her symptoms and was a patient in the hospital for an incomplete abortion some 6 months later. The other case was a young woman who had lost a baby a few weeks old. She became

aphonic, refused food, and exhibited signs of catalepsy. When seen at the close of a singing ceremony, the heat, grime and soot of the hogan gave her the appearance of a seriously ill person. After the ceremony she was literally dragged outside, supported under the arms by members of the gathering, and the medicine man drew with his hands something out of the atmosphere from the direction of the sun and poured it over the patient, repeating this air-catching about a dozen times; the patient was then carried back to the hogan. Examination showed that she was not as seriously ill as the first glimpse indicated. The family was divided on the question of permitting the patient to go to the hospital; but the prestige of the medicine men was undermined by a favorable prognosis in what appeared as a hopeless case. A few weeks later she was completely recovered. The Navajo is awed by the sight of a convulsion or loss of consciousness. Their hysteroids, especially the females, often profit from their special ability to "throw a fit" or lose consciousness at will; they become "diagnosticians." One Navajo described the diagnostician's practice in some such words as these: "She comes in, sits beside the patient, talks to him about his illness, at the same time feeling him all over the body. She sits quietly for a while. Then she falls to the ground, shakes, sometimes froths at the mouth, makes strange talk, struggles hard, and then comes back to herself like from another world. She says what is wrong with the sick one and orders a certain sing. She tells where to find the medicine man who can give such a sing. The family must find him and bring him to the hogan; he will cure the patient." Alcoholic psychoses are rare among Navajos. The sale of liquor to Indians is a Federal offence carrying a severe penalty on conviction, but there is always a little bootlegging on the reservation, by mixed-breeds. Intoxicants are at times sold in the small towns on the outskirts of the reservation. The Navajo is not an informer, making it hard to find the culprits. During prohibition days there was little drunkenness. A drunken Indian is a menace to himself and his neighbors because he is boisterous and easily led to bloody fights. It speaks well for their lawfulness that the local law enforcement bodies consist of 3 or 4 native policemen for perhaps 8000 Indians of a jurisdiction spread over many miles of territory.

Intelligence among the Navajos is of a high order, if proper allowance is made for their handicaps of customs, beliefs, and illiteracy. There are apparently few pronounced mental defectives. Their ability to acquire knowledge from schooling is excellent, up to about the second year of high school. More advanced learning seems difficult. They noticeably lack initiative and perseverance; few get beyond the high school. Those who are employed in specialized activity cannot be without supervision or else the work will be poorly or incompletely done. They are of artistic temperament; this they exhibit in beautiful designs on their blankets, silver work, and "sand paintings." They have an originality and a talent for drawing and painting.

Care of the Sick

When considering the care of the sick, the part played by their medicine men cannot be excluded from a broad consideration of medical problems in most of the United States. The "medicine men" of the Navajos are on a plane with the white "healers," but many of them should be rated higher for their sincerity, earnestness and true desire to help a fellow Indian. While most of their practices are ritualistic, their herbalists, a class of their medicine men, know the therapeutic affects of many grasses, berries and roots found on their reservation. This knowledge reached the present generation by word of mouth from ancestors long dead. To become medicine men they must go through long periods of apprenticeship and learning of the art of song or compounding of herbs, depending on the type of teacher or the class of practice desired. To qualify for apprenticeship, the aspirants must be worthy. This they achieve by several initiations at secret dance ceremonials, and good conduct in their daily relations with their neighbors. Many are destined from early childhood, by their elders, to become medicine men, and their instruction in song is begun at an early age. The songs are mostly legends about the race. Medicine men spend the long winter nights in the shadows of the glowing embers of the smoldering fires of hogans, smoking rolled cigarettes as they spin the tale of creation to their disciple. When lessons are well memorized, he is given opportunity to lead in song at a ceremonial in the presence of his mentor and

other medicine men. These latter act as judges; if the work is satisfactory they award the diploma of general recognition, and acceptance into their fraternity. It is not easy to become a bonafide medicine man; many who claim to be such must have heard about diploma mills and the lucrativeness from the title "doctor." There is native shrewdness among them which is at times used to feed on the ignorance of the masses.

In their present state of social and economic development, the medicine men do a great deal of good as well as a great deal of harm. They are generally the spiritual guides for the community—often leaders or head-men of their particular localities; their views command respect. To overlook or minimize this fact spells disappointment for the physician or missionary who tries to work among the tribe. To succeed, these strangers must gain the friendship and cooperation of the native healers. This is the only way to gain influence and to succeed in the task at hand, whatever the mission. The writer has been criticised for this suggestion—that the physician should so conduct his practice as to gain the confidence and cooperation of the medicine men. Until one has studied the problems of field work it is hard to see the necessity for this compromise with ignorance and superstition. This idea of "no compromise" was the doctrine of missionaries in a bygone day, and spelled failure for them; there are now few orthodox Christians in the Navajo country. The medical man should be free of prejudice and administer to all who ask for his services, or whom he may interest in accepting his service. The Navajo has many good reasons for mistrusting the white "friend," be he doctor or missionary.

The Navajo is a kind, appreciative, and trusting individual in a child-like fashion. He is sensitive and easily hurt; once offended, his confidence and friendship may never be gained. Those who intend to practice medicine or religion among the Navajoes are doomed to failure if they speak unkindly or disparagingly of their beliefs. They readily concede that we have knowledge and skill unknown to their medicine men, but their men have great learning and experience too; they knew enough to care for their sick before the white man came and they know medicine men who have cured

after the white doctor has failed. It should not take a physician long to realize there are many cases of illness which he cannot treat and which the medicine man will cure. It is the province of therapeutics to know when psychotherapy, even of an unorthodox variety, is the only remedy; its first principle is faith and trust and these the physician cannot give to his Indian patient. (We find this true among the civilized people as well.) There should be no more prejudice in ordering a "sing" for a patient than a particular drug from the U.S.P., if there is reason to believe it will help the patient to recovery. Physicians practicing with this view in mind eventually gain access to all hogans.

The practice of cooperation with their medicine men sometimes leads to humorous situations. More than once did a medicine man bring his patient to the hospital and ask for a consultation with the physician, saying: "This Indian is sick. He is a friend of mine. I am a doctor of my people. We are both interested in getting him well. I would like to know if you could help him, maybe we could work together for his good." To answer: "We will do everything to help your friend. We will try to explain what you may wish to know. You have tried your medicine already. It is well you should allow the white doctor a little time to try his medicine. We all work for the good of the people. Our knowledge is a little newer, so we can do a little more" . . . in most instances pleased all concerned. For several cases recognized as psychoneurotics the writer did recommend a "sing." In those cases where "sings" were recommended in preference to taking the patient to the hospital, the white doctor was invariably called for a later illness to the patient or members of the family. As the writer's acquaintance grew, many medicine men came for treatment to the hospital. At the Tribal Council meeting in July, 1933, the headman, a medicine man, in the writer's district, made an eloquent and fervent appeal* for improved and greater hospital facilities. This man, the summer before, sought signatures on a petition to curb the practice of surgery in hospitals. In 1933 his son underwent several operations for the removal of tuberculous

nodes in the neck. He and his son were patients in the hospital for several weeks.

* See Appendix.

(continued)

The 65th annual meeting of the **American Public Health Association** convenes in New Orleans, October 20-30. Dr. Tohmas A. Parran, Jr., Surgeon General of the U. S. Public Health Service is president-elect of the association. National headquarters are at 50 West 50th St., N.Y.C., and Dr. Reginald M. Atwater is executive secretary.

Effective June 1st, 1936, Dr. Robert Ferguson resigned as Chief Surgeon of the Copper Queen Branch of the Phelps Dodge Corporation at Bisbee, Arizona. He had finished thirty-one years service with the company, eight years as Chief Surgeon. He was succeeded as Chief Surgeon by Dr. Hal W. Rice of Morenci, Arizona.

RESOLUTION

Resolution Adopted by the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, June, 1936:

WHEREAS, At the annual meeting of the Joint Committee on Health Problems in Education of the National Association held at St. Louis, Mo., February 25, 1936, a presentation was made by Major Joel I. Connolly, of the Chicago Board of Health, relating to possible health hazards in apparently modern plumbing installations in public buildings, and

WHEREAS, It was manifest in the said presentation that plumbing fixtures which have been generally regarded as safe and sanitary in design may in fact constitute a real and serious health hazard by reason of the danger of back siphonage and contamination of water supply mains, and,

WHEREAS, The probability exists that such apparently modern, safe and sanitary plumbing installations and reliance upon them brings about a sense of false security, therefore, be it

RESOLVED, By the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association that this committee apprehends the possibility of danger to the health of school children from apparently safe, modern and sanitary plumbing installations in school buildings, and be it further

RESOLVED, That the said Joint Committee earnestly recommends to all school boards and school executives that surveys be instituted by competent engineers to ascertain whether or not the danger of back siphonage and consequent pollution of water supply mains exist in plumbing installations within their jurisdictions, and that such surveys be followed by prompt corrective measures, and be it further

RESOLVED, That these resolutions be offered for publication to all journals dealing with public health, health education and general education.

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NEW MEXICO SOCIETY DEPT.

L. B. Cohenour,
Sec., Albuquerque

NEW MEXICO NEWS

Dr. Stuart W. Adler, of the Lovelace Clinic, attended the Rotary International Convention in Atlantic City, New Jersey. He is President of the Albuquerque Rotary Club.

Dr. W. R. Lovelace, II, nephew of Dr. W. R. Lovelace, took up his duties July 1, as a Fellow in Surgery at the Mayo Clinic. He has a three year appointment.

Dr. E. T. Lassetter is expected to return from Europe about July 15. He has been a member of the group conducted through the medical centers of Europe by the Postgraduate Assembly of the Interstate Medical Society. He reports that he is having a most profitable and enjoyable trip.

The mother of Dr. W. H. Thearle passed away on June 24. She had been residing with him for several years.

J. D. Hamer
President

ARIZONA STATE ASSOCIATION DEPT.

D. F. Harbridge
Secretary

NEWS ITEMS

Dr. Fred Holmes, president of the Phoenix Kiwanis club, attended the Kiwanis convention in Washington, D. C., during July.

Dr. and Mrs. John E. Bacon of Miami, Ariz., visited in Phoenix during July.

Dr. B. L. Steward of Coolidge, Ariz., has been appointed physician at the penitentiary in Florence, Ariz., succeeding his brother Dr. Hobart Steward, who was found dead recently in a Compton, Calif., sanitarium.

A statewide prevention of tuberculosis campaign was started in Yavapai county during the latter part of July. The first towns visited were Clemen- ceau and Cottonwood. The United States Department of Labor Children's Bureau and the Arizona departments of the Forty and Eight and American Legion are cooperating with the state health board in the movement. The work done by this unit will be entirely diagnostic and is in charge of Dr. Gilmore, recently of Tombstone, Ariz.

Dr. W. S. Sharp and Dr. Melvin L. Kent of Mesa, Ariz., will alternate in giving their services examining infants and pre-school children of Mesa.

Overtaken by darkness while fishing in rugged Granite Creek canyon of the Mount Graham district, Dr. J. H. Stidham, decided he wouldn't be lost." He built a fire and waited until daylight. A searching party found him early the next morning. The sheriff had been notified when he failed to return to camp.

Dr. and Mrs. O. E. Utzinger of Ray, Ariz., and their sons visited in Phoenix during July.

Twenty-two crippled children of Greenlee and Gila counties were examined on July 10th by Dr. R. D. Kennedy at the crippled children's clinic held at the Gila county hospital under the direction of Miss Ruth Wendell, director of the crippled children's division of the Arizona board of public welfare. The Federal government under the security program offers opportunity for many of these children to receive treatment.

Dr. James M. Meason of Chandler, Ariz., addressed the Chandler Rotary Club during July, giving the club the highlights of his trip to the American Medical Association meeting in Kansas City. He also told of his tour of the United States in which he spent two months away from his home.

Dr. George C. Truman, state superintendent of public health of Arizona, has been elected a member of the regional board of the western branch of the American Public Health Association.

Dr. A. P. Kimball of Yuma was a visitor to Phoenix in the latter part of June.

Dr. E. C. Houle, of Nogales, Ariz., was a recent visitor in Phoenix.

Dr. Meade Clyne of Tucson, Ariz., past president

of the Arizona State Medical Association, spent a few days in Phoenix around the first of July attending the meeting of the Industrial Relations Committee.

Dr. R. D. Kennedy was in Phoenix attending the Arizona Industrial Relations committee early in July.

Dr. Angus J. DePinto, recently of Chicago, joined the Phoenix Clinic about the first of August. He will devote his work to obstetrics. Dr. DePinto has been at the Cook County hospital doing obstetrics for the last several years, and for the last year has been resident physician in charge of the obstetrical work of the hospital.

Dr. C. L. Stewart, recently of Tucson, has moved to Tombstone to take over the practice of Dr. W. D. Gilmore who is associated with the state department of public health in the capacity of tuberculosis consultant. Dr. Stewart was born in Lowell and is a graduate of the University of California school of medicine. He spent two years in the Philadelphia General hospital. He was later chief resident physician of the St. Francis hospital in San Francisco for a year. During recent months he has been associated with the Southern Pacific Sanatorium in Tucson.

Dr. C. C. Creighton is opening a hospital in Flagstaff, Ariz. He is a graduate of McGill University. He spent his first year of internship at Montreal and then entered St. Joseph's hospital, in Phoenix for his second year. He moved to Flagstaff from Phoenix about two years ago.

Dr. L. D. Beck recently opened offices in the Goodrich building, Phoenix, Ariz., in association with Dr. Gerald C. Lewis. Drs. Beck and Lewis were internes at St. Joseph's hospital, Phoenix, during the past year.

Dr. H. J. McKeowin left around the first of July on an extensive trip through the eastern states. He plans to visit Mayo Clinic and several clinics in the east.

Orville Harry Brown of Phoenix vacationed for the last two weeks of July in Los Angeles.

Dr. G. F. Manning of Globe, conducted examinations each Monday during July for pre-school children and infants. He also went to Winkelman and Young on certain days of the week.

Dr. E. Payne Palmer resigned as the state representative of the American Society for the Control of Cancer.

Dr. Nelson D. Brayton of Globe, told the Rotary club of that city all about the Democratic national convention.

Dr. C. L. Magruder, who has been stationed at Fort Whipple for the past two years, has been transferred to a similar post at Fort Bayard, N. M. He was clinical director of the Veterans' facility at Fort Whipple.

Dr. Norman A. Ross had a short vacation in San Diego during July which was interrupted by the acute illness of his associate, Dr. Tuthill.

Maj. Gen. A. M. Tuthill, state adjutant general, was operated on for appendicitis July 23, 1936, in St. Joseph's Hospital. He is reported as convalescing at his home.

Dr. James C. Walsh, of Jerome, Ariz., has joined the C.C.C. camp near Flagstaff to take over its health and sanitation work.

Dr. Monroe K. Ruch of Kingman, Ariz., is now connected with the C.C.C. camp on the south rim of the Grand Canyon.

Dr. and Mrs. James M. Moore received word recently that their son, James M. Moore, Jr., has been sworn in as a cadet at the United States Military Academy at West Point.

Dr. Chas. N. Ploussard spent several weeks in post graduate study in the St. Louis clinics during July.

Dr. and Mrs. W. B. Watts, Jr., of Miami, spent a few days in Phoenix during July.

Dr. Joseph Bank returned to Phoenix recently, having been in the east for the past two months.

Dr. and Mrs. James E. Drane of Phoenix returned home from a coast vacation, dividing their time between San Diego, Los Angeles and San Francisco.

Dr. and Mrs. C. A. Thomas have gone to Honolulu to attend the Pan-Pacific Surgical Congress where Dr. Thomas will read a paper on collapse therapy. On their way they will stop in San Francisco to visit with their son, Naugle, a recent graduate from the Tulane University Medical School now interning at the San Francisco General Hospital.

Tucson fishermen continue to be quite successful. Dr. Donald Hill recently captured a tremendous swordfish at Guaymas.

Dr. Tom Durant has accepted a position on the teaching staff of Temple University Medical School, Philadelphia.

Dr. Vivian Tappan has gone east for the remainder of the summer doing work in various eastern clinics.

Dr. Roland Davison and family are visiting in Europe this year.

Dr. and Mrs. Charles Barley, Tucson, are spending the month of August at Laguna Beach, Calif.

Dr. and Mrs. B. P. Storts and son of Tucson, have recently returned from a visit in La Jolla, Calif.

Dr. and Mrs. V. G. Presson of Tucson spent a week in the early part of July visiting in San Diego.

Dr. Victor Gore of Tucson, will join Mrs. Gore at Long Beach, where they will spend their vacation.

Dr. and Mrs. Biddle of Tucson are spending their vacation in San Francisco.

Dr. F. W. Allen of Tucson is visiting in New York.

Dr. Roy Hewitt of Tucson is spending some time during the summer at Rochester, Minn.

Dr. Clyde E. Flood and family, Tucson, spent the month of June in Washington, D. C.

Dr. Magill Schultz and family, Tucson, are on the coast for the month of July.

Dr. and Mrs. Chas. Kibler of Tucson are visiting on the coast during the month of July.

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★ *Proc. Soc. Exp. Biol. and Med.*, 1934, 32, 241-245
Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154
N. Y. State Jour. Med., June 1935, Vol. 35, No. 11

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Stephen Schuster,
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EL PASO COUNTY SOCIETY DEPT.

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EL PASO COUNTY MEDICAL SOCIETY

The meeting of the El Paso County Medical Society of May 25, 1936 was called to order at 8:00 P. M. by Dr. Stephen Schuster at the Hotel Dieu nurses' home.

The minutes of the previous meeting were read and approved.

The program consisted of the following:

Dr. Leslie Smith read a paper on Acne Vulgaris. The paper was discussed by Dr. J. W. Cathcart, Dr. W. W. Waite, Dr. L. O. Dutton, Dr. Strong, Dr. Schuster and Dr. Smith.

Dr. F. Schuster read a paper on The Larynx in Tuberculosis. The paper was discussed by Dr. R. B. Homan, Dr. Ralph Homan, Dr. Chester Awe, Dr. Paul Gallagher, Dr. L. O. Dutton, Dr. Clay Gwinn, and Dr. F. Schuster.

Dr. Swope reported a case of paranoia with se-

verely clubbed fingers and toes with bronchiectasis.

Dr. R. B. Homan read a report of the Committee on Resolutions on the late Dr. Rawlings. The report was adopted.

Dr. W. W. Waite moved to send a resolution to the members of the Prentiss family in regard to the late Dr. Prentiss. Resolution was passed.

Dr. McCamant moved that the meetings of the El Paso County Medical Society be adjourned until the second Monday in September.

Dr. Waite informed the Society that Dr. Prentiss had a full set of the copies of the old El Paso County Medical Society bulletins.

Dr. Rennick read a report of the Central Medical and Dental Service to date.

Meeting was adjourned at 9:30 P. M.

L. O. DUTTON, M. D., Secretary.

BOOK REVIEWS

ENDOCRINOLOGY IN MODERN PRACTICE: By William Wolf, M.D., M.S., Ph.D. 1018 pages with 252 illustrations. Philadelphia and London: W. B. Saunders Company, 1936. Cloth, \$10.00 net.

Dr. Wolf has been working for over 4 years in an attempt to gather and correlate the important clinical and experimental data and to boil it down so that it can be contained in 1 reasonably sized volume on the endocrines.

The book is divided into 36 chapters. At the end of each chapter is a summary. On page 116 is a summary of the chapter on the pituitary gland. This summary is divided into anatomy embryology, histology, biology, physiology, infantilism, mongolism, dwarfism, Frohlich's syndrome, Dercum's disease, Schuller-Christian syndrome, acromegaly, diabetes insipidus, basophilic adenoma, pituitary tumors, and pituitary epilepsy. He has used the outline system in the summaries. The chapter on diagnosis is summarized on page 801 on 1 page. The general headings of this are: Hereditary factors, personal history, normality of body functions, nervous and mental traits, sexual history, essentials in children, signs of menopause, and present complaints of patient.

This summary is divided into anatomy, embryology, of laboratory findings occupies 6 pages and includes an outline and summary as follows: Blood, non-protein nitrogen, urea nitrogen, creatinine, uric acid, sugar tolerance, lactose, galactose, cholesterol, lipid phosphorus, inorganic phosphorus,

phosphatase, chlorides, calcium, diffusible calcium, magnesium, potassium, CO₂ combining power of blood, hydrogen ion concentration, iodine, estrin, gonadotrophic factor of pituitary, red cell sedimentation, acetone bodies, indican, albumin, Mosenthal test of kidney function, Aschheim-Zondek and Friedman pregnancy tests, estrin, pregnancy tests, other less dependable pregnancy tests, basal metabolism, specific dynamic action of protein, and interferometry.

Beginning on page 905 is chapter 33 which deals with symptom diagnosis. The first few paragraphs describe the method of using this chapter and then is given a list of 393 symptoms and under each are references to the text and the disease manifesting the symptoms; for instance under soft silky hair comes, hyperthyroidism page 292, hypopituitarism page 121, thymic hypertrophy 416, and the suggestion of allergy and seborrhea with no pages given, indicating these are not discussed.

On page 940 is an alphabetical index to the list of diagnostic symptoms. Chapter 34 is devoted to laboratory procedures and tests which are valuable. Chapter 35 is devoted to a description and dosage of commercially available endocrine products. He has chosen only the products of firms that appear to be reliable. He says his personal experience with the advice of his conferees has helped him to decide which products to include and which to omit.

Since endocrinology is assuming a more and more important place in therapy this would seem



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THE EYE AND ITS DISEASES: By 82 International Authorities; Edited by Conrad Brens, M.D., Ophthalmic Surgeon, Pathologist and Director of Research, N. Y. Eye and Ear Infirmary, special consulting Ophthalmologist Woman's Hospital, consulting Ophthalmologist, Veterans Administration Facility, N. Y., Lecture in Ophthalmology, N. Y. Eye and Ear Infirmary, member of American Board of Ophthalmology, Member of the Society of Surgeons of Paris and Lieutenant-Colonel, M.R.C., U.S. Army; 1254 pages with 436 illustrations, some in colors; Philadelphia and London; W. B. Saunders Co., 1936; Cloth, \$12.00 net.

Among the contributors to this book are such well known individuals as: Drs. E. Y. Brown of Chicago, George L. Callender of Washington, D. C., Edward Jackson of Denver, William H. Luedde of St. Louis, Mo., Meyer Wiener of St. Louis, and Alan C. Woods of Baltimore, Maryland. In fact, each of the 82 is an international authority on some phase of eye disease. The book is divided into 73 chapters and seems to cover every possible phase of the subject and should be a most excellent reference book to which every oculist should have access.

MINOR SURGERY: By Frederick Christopher, S. B., M. D., F.A.C.S., Associate Professor of Surgery at the Northwestern University Medical School, Chicago; Chief Surgeon at the Evanston (Ill.) Hospital; Foreword by Allen B. Kanavel, M. D., F.A.C.S., Professor of Surgery at the Northwestern University Medical School; Third Edition, Reset; 1030 pages with 709 illustrations; Philadelphia and London; W. B. Saunders Company, 1936; Cloth, \$10.00 net.

Dr. Christopher has had in mind in writing this book that minor surgical procedures are not stressed in medical schools as is major surgery and that physicians generally do not have a working knowledge of many of the minor surgical problems. He has taken up in great detail the various conditions demanding minor surgery and explains how best to handle them. In paging through the book one is impressed with the large number of subjects discussed. It seems that he has thought of nearly everything that is encountered.

The illustrations are excellent, often telling the story without reference to the text. The publisher's art is beautifully portrayed. The book is highly recommended especially to those who are frequently encountering cases needing minor surgery.

THE TRUE PHYSICIAN—The Modern "Doctor of the Old School," by Wingate M. Johnson, M. D.; The McMillan Co., San Francisco; 1936.

Dr. Johnson gives his opinions as to how physicians should conduct themselves under almost any and all sorts of circumstances. The advice applies more especially to those beginning practice than to those who have been long established.

He tells the young physician how to select an office and how to deport himself in his early years of practice, etc. A few of the chapters are entitled "Routine of the Practice," "The Doctor as a Student," "The Doctor as a Citizen," "The Business Side of Practice," "The Principles of Medical Ethics," "The Personal Side of the Doctor," and "A Physician's Reading."

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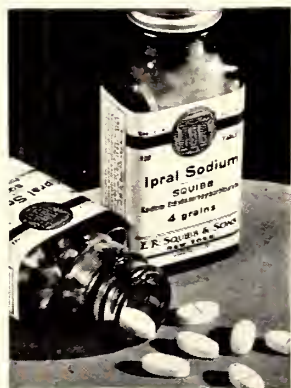
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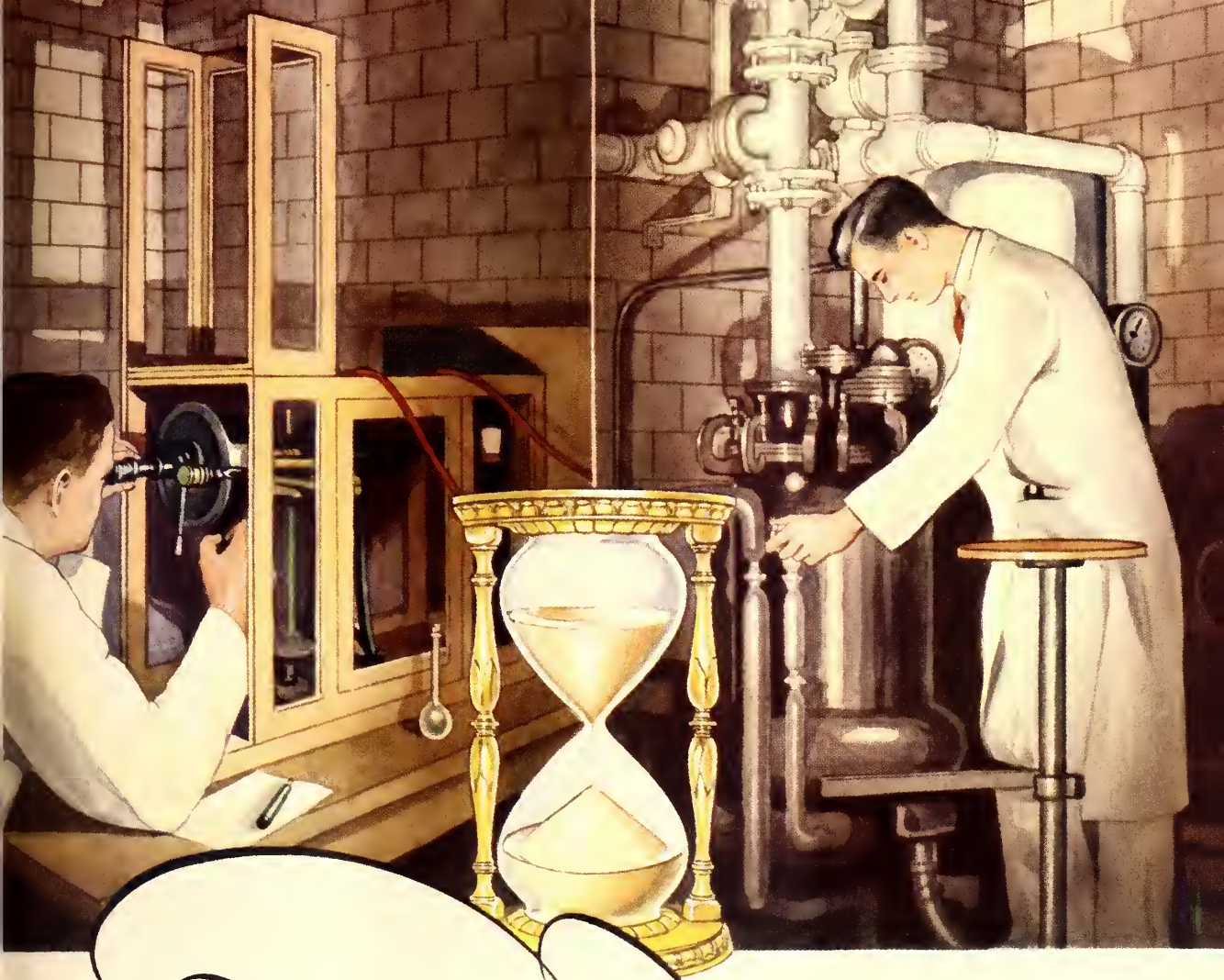
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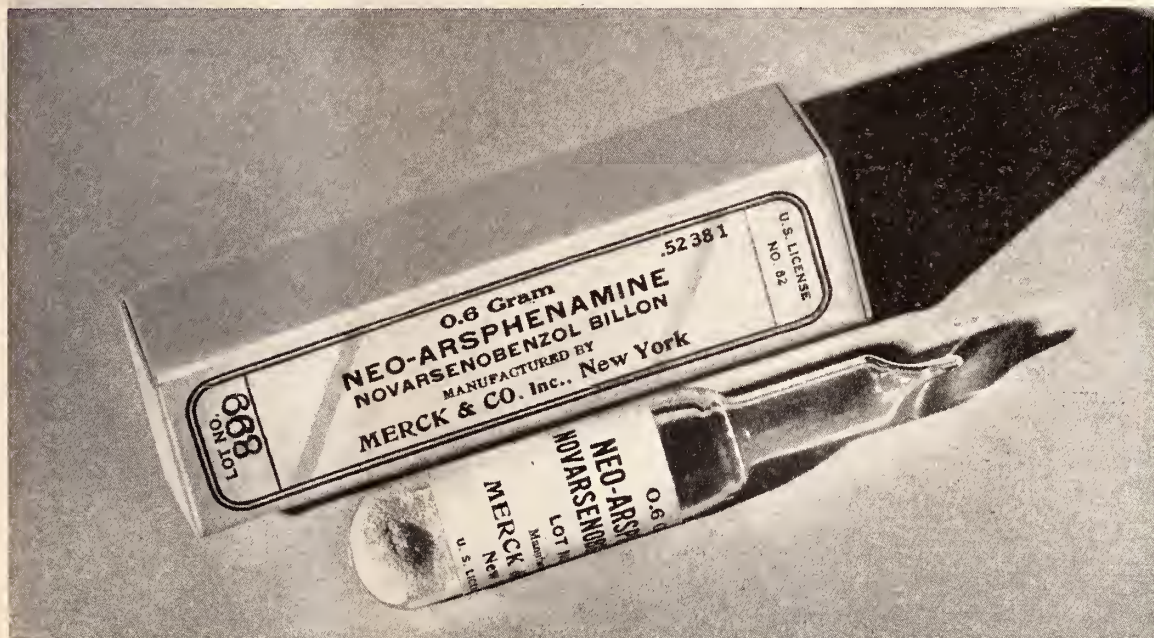
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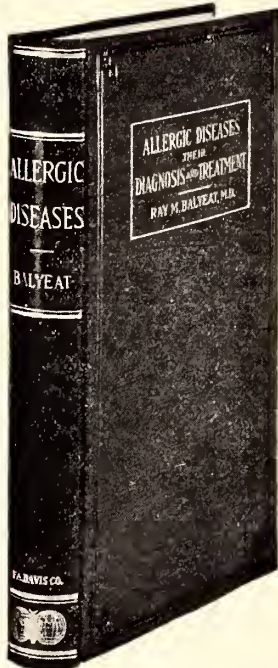
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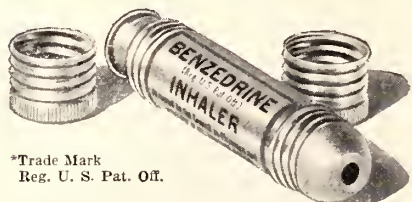


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- (1) 1927. J. Exp. Med., 46, 699
(2) 1935. J. Nutrition, 9, 735
(3) 1929. Biochem. J., 23, 803

- (4) 1931. J. Biol. Chem., 94, 185
(5) a. 1933. J. Am. Diet. Assoc., 9, 295
b. 1931. J. Nutrition, 4, 267

- c. 1935. Am. J. Pub. Health, 25, 1340
(6) a. 1925. Ind. Eng. Chem., 17, 69
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ARIZONA STATE MEDICAL ASSOCIATION
EL PASO COUNTY (TEXAS) MEDICAL SOCIETY

NEW MEXICO MEDICAL SOCIETY
THE SOUTHWESTERN MEDICAL ASSOCIATION

VOL. XX.

SEPTEMBER, 1936

No. 9

ANNUAL SUBSCRIPTION \$2

SINGLE COPIES 25 CENTS

Entered at the Postoffice at Phoenix, Arizona, as second class matter.

"Acceptance for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized March 1, 1921"

PUBLIC HEALTH NOTES

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Amebic Dysentery

The southwest will take special interest in the National Institute of Health's report¹ of the Chicago epidemic of amebic dysentery in 1933. In the first place Dr. A. V. Hardy, of the U. S. Public Health Service, one of the authors of this report, is now in charge of research on the causes of dysentery in the southwest. In the second place amebic dysentery is undoubtedly endemic in the southwest. Cases are reported with some regularity and the early results of protozoologic study indicate that in one locality at least there is a heavy infection.

Apart from our local interest this report has significance wherever scientific medicine is practised. Diagnosticians must bear in mind that they may have to deal with cases of amebic dysentery and the observations of the Chicago outbreak now reported in full are a valuable supplement to available information.

Diarrhea was the commonest symptom reported. It was mentioned specifically in 1,077 cases or 88.6% of the total. It was denied in 18 cases and not mentioned in 120. In 31 cases constipation was at some stage a note-worthy complaint. Blood and mucus were reported in 90% of the severe cases and in 72% of the mild cases in Chicago but less frequently in cases outside Chicago.

One patient suffered from constipation, flatulence, rectal soreness and varying amounts of blood and mucus in the stools. For 4.5 months various diagnoses were made. At the end of that time a stool examination established the existence of amebic dysentery and under specific therapy the symptoms rapidly disappeared. Symptoms of acute abdominal conditions and of rectal disorders were com-

mon and gave rise to numerous errors of diagnosis. Abdominal tenderness was sometimes acute and frequently localized. In 3.4% of all cases and in 17.1% of all fatal cases a diagnosis of appendicitis or of appendiceal abscess had been made. Other mistaken diagnoses were cholecystitis, malignant disease, rectal disorders, malaria and typhoid fever.

Ninety-eight deaths occurred in 1,409 cases. a fatality rate of 7 per cent. However, no death followed prompt diagnosis and adequate specific treatment. "Specific therapy proved to be remarkably effective. On the other hand, non-specific medical measures were usually disappointing and surgical intervention often disastrous."

The report gives what we believe to be the first reliable data on the incubation period in amebic dysentery. This was 1 week or less in 6.7% of cases, 1 to 4 weeks in 59%, 5 to 8 weeks in 24.7%, 9 to 13 weeks in 7.4% and over 13 weeks in 2.2%. In the last group are 2 cases in which the first symptoms were of liver abscess.

1. Bundesen, H. N., et al: Epidemic Amebic Dysentery. Nat. Inst. of Health Bul., No. 166, Washington, D. C., U. S. Government Printing Office, 1936, Pp. 187; Price 20c.

GASTRIC AND DUODENAL ULCER: MEDICAL CON- SIDERATION

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(Read before the El Paso County Medical Society)

Reliable recent data indicate the increasing prevalence of peptic ulcer in the United States. It is more prevalent than noted in the British Empire, though less severe. To what may we attribute this increased prevalence—to better diagnosis, to changing dietary habits, to an increased nervous instability, or to the more problematical endocrine disturbances? Mann^{1a}

in an experimental study on animals has reproduced ulcers similar to those classified as chronic ulcer in man by acid shunting operations proving that acidity is an important factor in their causation. Toxic conditions manifest themselves in ulcerating lesions though most frequently producing the acute type.

The importance of infection has long since been proven in association with dental abscesses. Rivers and Mason^{1b} reporting on 700 surgically verified cases report the presence of gall bladder infection in 13%, and probably 3.3% additional. This complication was more frequent in duodenal than gastric involvement and was more prevalent in women. Hartman and Rivers^{1c} reporting a similar number of cases showed evidence of appendicitis in 44.4%. This complication was also less frequent in gastric ulcer. Gastric or duodenal ulcer was found only in 3.2% of 879 surgically verified cases of cholecystitis. Fatigue and poor environment contribute to the general picture.

Smithies² considers that peptic ulcer is a complication of a prior mural defect due to many agents to produce arterial defects. The ulcer complication is an accidental involvement of the mucosa. He feels that evidence warrants the opinion that a large majority of the human family experiences these mural defects, but in the majority they fail to include the mucosa and therefore do not manifest themselves.

Hoerner³ reports peptic ulcer in 42% of animals in which a pancreatic fistula was made. Witherspoon⁴ recently reported a traumatic ulcer in a boy aged ten. Rivers and Dry⁵ think reactivation of ulcer comes from traumatization of local tissue, erosion made possible by any means which reduces the defensive reaction of tissue, and certain systemic factors of which neurogenic influences are the most important Feigenbaum and Howat⁶ in a study of 67 patients conclude that with a few exceptions no anatomic characteristics were distinctive.

Masten and Bunts⁷ report 6 cases of brain lesion associated with erosion and perforation of the upper part of the gastro-intestinal tract, referring to the experimental evidence of the location of para-sympathetic and sympathetic centers in the inter-brain. Vitamin deficiency

has its proponents, as reported by McCarri-son^{1d}. The familial tendency is of importance. No age is exempt, Kennedy^{1e} having reported on presence of ulcers in the new born, both acute and chronic. Kunstadter and Gettelman⁸ report death in a new born from gastric ulcer hemorrhage. Hanke⁹ reports the production of ulcer experimentally by the injection of insulin. Ulcer is one more complication laid at the toxic door of cinchophen.

In a recent review of 534 cases under my treatment studied rentgenologically, duodenal ulcer appeared in 9%, gastric ulcer in 1% and gastric carcinoma in 0.9%. Duodenal and gastric ulcers appeared together in 2 cases. Eusterman^{1f} reports ulcer of the duodenum in 12.2% and gastric ulcer in 1% in a series of 15,985 gastro-intestinal cases undergoing rentgenologic examination. Twenty-four cases had lesions in both areas. He reports the ratio of duodenal ulcer to gastric ulcer to gastric carcinoma as 12:1:3.

Robertson and Hargis^{1g} report active or healed duodenal ulcer in 11.85% of 2,000 post-mortem examinations. It is interesting to note that only 38% of these had had diagnoses of duodenal ulcer and in the remaining 62% only a few or no symptoms were reported in the clinical history. The ratio of male to female shows the usual preponderance of 4:1.

Of a series of cases operated at the Mayo Clinic^{1h} there was an average duration of symptoms of 10 years in the duodenal groups whereas the average duration of symptoms was only 7 years in gastric involvement. One hundred physicians whose average age at time of operation was 47 years showed a duration of symptoms of an average of 13 years.¹ⁱ Occupation as a causative factor is considered; however, the reported prevalence of involvement in the far districts does not coincide with our present neurogenic concept.

Ulcers may present an acute or chronic histological picture with a sub-acute intermediate stage. The acute type is most frequently of toxic or septic origin in association with appendiceal, cholecystic, dental, or tonsillar infections. Superficial burns and extra-gastric malignancy may be at fault. The chronic type presents the symptoms with which we are most familiar. It is difficult, and in the vast majority of cases quite impossible, to differentiate clinically between gastric and duo-

denal involvement. Though a careful history may reveal this differentiation, or an increased secretory response may point to the localization of involvement, we usually must rely on radiosopic study.

Possibly only of academic interest in the young, but as the cancer age is reached proper localization becomes more of a necessity, since the management of the 2 types of disease is frequently altered at this age owing to the prevalence of malignant involvement in gastric ulcers in contrast to the practical absence of malignancy in the duodenal. In a typical case of gastric involvement the pain usually occurs in a shorter period of time following meals and usually is automatically relieved without the requirement of food as with the duodenal. The discomfort in gastric involvement is not so easily relieved by food; small amounts may give relief and large amounts distress. An ulcer located near the cardia may give pain before completion of the meal. Rivers¹⁰ reports poor localization of pain in 90% of uncomplicated gastric ulcers. He reports localization of pain to the left upper abdominal quadrant near the costal margin in 90% of cases in the perforating stage. With involvement of the mesentery, mesocolon, and abdominal wall 93% showed secondary shifts to the thorax and neck.

In duodenal ulcers the pain was poorly defined in 64%; 90% in the perforating stage showed localization to the right upper quadrant; 77% of the perforating group showed a shift towards the liver region and the back. It is the group with irregular symptoms, or perhaps with none of the classical symptoms of ulcer that most frequently results in the more serious complications and taxes our diagnostic skill. Fullness, distress, gas, distention, burning, nausea, vomiting, and vague symptomatology may be complained of, but these are symptoms which may be associated with any other gastro-intestinal conditions. The relation of symptoms one to the other and their response to food or medication often render the correct interpretation. Complicating factors such as appendicitis, cholecystic diseases, irritable colon, other neurogenic disturbances, pancreatic disease, and improper habits such as excessive smoking, may often mask the symptoms of the primary disease. On the contrary it must be remembered that one or more

of these complicating factors may be actively present and may require equal attention. Persistent vomiting bespeaks of pyloric obstruction, possible either from cicatrization or spasm. Hematemesis is more frequent in gastric involvement. Blood, if present in the feces, will be intermittent in both conditions. Painless hemorrhage may be present. Both conditions are characterized by chronicity and intermittency of symptoms. Seasonal variation has long been considered as a hint to diagnosis, whether this be due to acute infections or other factors we are unable to say. Hour-glass deformities and slow perforation into a neighboring viscus or the formation of periduodenal adhesion will alter the symptomatology. Hemorrhage, perforation, and pyloric obstruction are more common in duodenal than gastric involvement.

Gastric analysis studies may or may not be of value. Hellebrandt and Brogdon¹¹ conclude that although fractional gastric analysis is of questionable value for quantitative studies of gastric functions it remains the method of choice for qualitative determinations of gastric acidity and for approximation of secretory capacity. The fasting contents are increased. Increased secretory volume and acid are the rule. The plotted curve shows a rapid rise during the digestive phase and this is maintained to the end of the digestive cycle. Varying degrees of pyloric obstruction may be recognized by gastric aspiration.

The differential diagnosis will be facilitated by a careful history, a proper evaluation of symptoms, radiosopic study, and a careful study of the patient as a whole, taking into consideration his economic, social, and neurogenic background. Too frequently a hyperthyroid state, pulmonary tuberculosis, tuberculous cecum, an ulcer in a Meckel's diverticulum, cardiac pathology, allergy, neurogenic manifestations, hyper-insulinism, syphilis, depressed acid states, functional disturbances, diaphragmatic and epigastric hernia are overlooked or misinterpreted. The failure of response to ideal treatment may be the clue. Harris¹² reports episodes of nervousness and weakness associated with abdominal discomfort, not actual pain, with relief from nourishment as indicative of hyper-insulinism and suggests blood sugar determination during an attack or in a fasting state. Intractable con-

stipation may complicate the picture and cause a persistence of symptoms.

Owing to the chronicity of the condition much attention has been given in recent years to the prognosis of this condition. Of vast importance is the question of the insurability of such cases. They are considered of sub-standard risk and a period of relief of symptoms is demanded by most insurance companies for consideration of their application. Nielson^{1k} states that death from hemorrhage or perforation is infrequent, that death is even remote in the rebellious cases, and the more chronic the lesion the less likely the cure.

Emery¹² in a study of 1435 cases concludes that the disease remains active after both surgical and medical treatment, that the higher percentage of cures by surgery is offset by the higher percentage of failures and that the aim should be to prevent relapses; and this requires a carefully regulated schedule. Emery and Monroe¹³ in a study over a long period of years concluded that the disease tends to persist throughout life when once it is established and that the disease is rarely fatal and as a rule does not shorten life. It is subject to complications, but in the average case does not tend to get worse as time goes on.

Considerable attention has been accorded treatment in recent years with several new methods and suggestions. It is also interesting to note the encroachment of the diet faddist and the commercial firms in this field. On personal inquiry from one of the leading druggists in the city it was learned that they had 20 proprietary and 2 patent antacid preparations in stock as best-sellers with many more of both types decorating their shelves, but in less public demand.

DePew¹⁴ reporting on the treatment of peptic ulcer, reviews the treatment of ulcer by hypodermic injections of pepsin, the sugar cure of Strauss, subcutaneous injections of posterior lobe pituitary, aluminum hydroxide, mucin, the continuous alkalized milk drip advocated by Winkelstein, injection of parathyroid extract, bromide and belladonna, the effect of amino acids in the evolution of experimental ulcers, dehydrated okra powder, Brook's hemo-protein, Saunder's vaccine, intravenous injection of emetine hydrochloride, and his own experience with the use of synodal. He reports 41 cases treated by him by

this method with a recurrence in three, one of these showing improvement under a second course of treatment. He advocates Sippy diet and rest in bed as adjuncts in the treatment. He reports the remainder of the cases yielding nicely to this mode of treatment.

Fogelson¹⁵ in reporting his use of mucin states that a preliminary investigation has suggested the lack of mucin in many patients with ulcer. He quotes Hurst as observing a deficiency of mucin in 10% of young adults whom he thinks are predisposed to the formation of ulcer. It is agreed that mucus has the function of protection and lubrication. His study of questionnaires on 494 patients showed the ability of gastric mucin to control all symptoms in 70.5%, partial relief in 23%, with failure to afford relief in 6.5%. In 217 patients with intractable ulcer who were not relieved by medical management, of whom 69 had been submitted to previous surgical procedure, gastric-mucin afforded complete relief in 63.1%, partial relief in 29.4% and no relief in 7.5%. He concludes that this last group suggests the possibility of obtaining symptomatic relief with mucin in a relatively high percentage of cases in whom accepted orthodox methods had failed.

Eads¹⁶ in reporting on 35 cases treated by injections of a 4% solution of histidine hydrochloride concludes that peptic ulcers, non-obstructive in type, with comparatively short histories appear to respond best to this treatment. The gastric ulcers show more rapid improvement than duodenal. That if of value, its chief benefit would appear to be in the elimination of dietary and medicinal regime. Rivers¹⁷ reports administration of duodenal extract in 8 cases. Jones¹⁸ in a series treated with insulin reports an increase in gastric secretion with corresponding improvement of appetite and decrease in total acidity and free hydrochloric acid.

Sandweiss and Meyers¹⁹ reporting a series of 33 cases treated with a Park-Davis stock vaccine showed remission of symptoms in 77% but states that a cure should not be anticipated. Einsel, Adams, and Meyers²⁰ state that aluminum hydroxide gives rapid improvement of symptoms without toxicity and shows a lowering of free hydrochloric acid, and does not stimulate a later increase of hydrochloric acid. Woldman and Roland²¹ advocate the

control of acidity by the continuous drip of aluminum hydroxide.

Jordan²² reports that healing took place in 75% of a series of perfectly controlled cases within 10 weeks of treatment by the conservative method. Atkinson²³ reports the relief of pain and the production of remissions in a large percentage of cases by the treatment with okrin. Cecil²⁴ quotes Pribram in the treatment by intravenous injections of novo-protein with relief of pain in from 50 to 60% of the cases, and x-ray evidence of healing. Bastedo⁴⁵ in a study of atropine and belladonna concludes that in doses sufficient to get results they produce disagreeable and distinctly harmful by-effects that persist long after the stomach action has ceased. Gaither²⁶ quotes personal communications from Rosenberg, Garbat, T. R. Brown, and Aaron as showing no enthusiasm regarding parenteral methods. He quotes Ralph C. Brown as favoring the conservative method to the use of mucin. Silicon dioxide is recommended in the chronic indolent cases, but is best avoided in cases with any tendency toward bleeding. Gaither²⁶ advocates conservative methods admitting an open mind for future development in the radical field.

It is regrettable, and even deplorable, that gastric and duodenal ulcers are too often treated by routine didactic principles recommended for the disease rather than by treatment and study aimed at the individual case. The routine use of any type of diet whether it be the Sippy regime, that advocated by Smithies, or methods advocated by foreign authors may prove unsatisfactory. All have their merits, and yet every patient cannot tolerate the strict enforcement of any of these methods. Not every patient can tolerate hourly feedings and those who can for a few days may later show signs of intolerance in the early afternoon. In the dietary management certain general principles should be applied; frequent feedings are essential for the control of excessive acidity, elimination of roughage and foods difficult to digest, a study of the patient's food idiosyncrasies with special reference to food sensitization, and attention to building the diet slowly enough to meet the requirements with attention to essential elements.

Neurogenic and other complicating factors must be recognized and given their proper at-

tention. Sedatives are of value and often are indispensable, such as bromides or phenobarbital alone, or in combination with one of the belladonna group. Attention should be given to proper elimination, but only mild preparations which will not produce intestinal irritation are indicated. Alkalies are to be given if needed. I do not favor their frequent administration. The newer preparations such as kaomagma, colloidal kaolin, and others of this type are of definite value.

Treatment should be continued for a period of at least 1 year with frequent secretory and radioscopic observations. Every effort should be extended in obtaining the cooperation and understanding of the patient with careful explanation to him of his condition, the purpose of the treatment, and the probable failure of relief if he does not adhere to a strict regime. Exercise is to be advised as indicated. Bed rest is desired when practical, unless the emotional status seems to contra-indicate. Elimination of tobacco and liquor is often of great value in treatment.

Special emphasis should be given to regular habits of living, stressing the importance of eating slowly and at regular hours, with the observance of intermediate feedings. If alkalies are administered the symptoms of alkalosis should be watched for. If they occur alkalies should be discontinued immediately and fruit juices given in large quantities. Alkali therapy should be guarded in cases showing evidence of renal or liver damage, and arteriosclerosis, as advocated by Wilkinson and Jordan²⁷.

Perforation is to be treated by immediate surgery. Evidence of a perforating lesion demands immediate bed treatment.

Massive hemorrhage requires emergency treatment. Complete rest, mental, physical, and physiological is mandatory. Morphine or dilaudid as suggested by Hendon²⁸ may be given as often as every 2 to 4 hours as required. Smithies²⁹ advocates doses as large as 0.5 to 1 grain as often as every 2 to 4 hours if required. Nothing should be given by mouth until bleeding has definitely ceased or for a period of 3 to 4 days after hemorrhage has ceased. If required, fluids may be administered subcutaneously or by rectal administration. Smithies²⁹ advocates small repeated transfusions when necessary. Where the blood coagu-

lation is low he advises 200 c.c. of a 1% solution of sodium bicarbonate and 20 c.c. of a 5% solution of calcium chloride. He further advises extremely hot moist applications tightly bound to the abdomen as preferable to the conventional ice bag. A nutrient enema of 8 ounces of normal salt solution, 30 c.c. of glucose syrup, 30 c.c. of 50% alcohol to be given 4 times in 24 hours. The head and shoulders should be placed low. If vomiting persists and is copious lavage with normal salt at a temperature of 110 degrees as suggested by Rodman is also advised by Smithies. This, however, does not have universal approval.

Hendon²⁸ recommends venoclysis of 10% glucose in Ringer's solution or normal saline for varying periods of 10 days. MacGuire³⁰ advocates the use of small quantities of ice water, 200 to 300 c.c. each of chilled ferric chloride 1-1000 solution, and also silver nitrate solution 1-1000, glucose solution up to 50%, and adrenalin solution to be introduced if desired through a Levine tube. Increasing pulse and falling blood pressure are evidence of continued hemorrhage.

A case under my treatment at present showed a drop in blood pressure to 58/42 within 2 hours after noticeable symptoms of hemorrhage. After bleeding has ceased and the blood pressure has risen a secondary drop is frequently noted after several days, but in association with a pulse of normal quality and rate, with absence of blood in the stool this is not significant. Blood may continue to be present in the feces 6 to 9 days after hemorrhage has ceased.

In conclusion: The successful management of gastric and duodenal ulcer demands an exhaustive study of the patient; and the treatment must be individualized. Unsuccessful progress after a reasonable period suggests incomplete diagnosis, failure of cooperation of the patient, possibly a poor understanding of his condition, or the need of surgical interference. I further emphasize that the disease is one of marked chronicity characterized by remissions, and that the best available statistics fail to show permanent relief in a percentage higher than 75. Furthermore, all gastric ulcer casts in the cancer age submitted to medical treatment should be closely observed clinically for change in symptoms and radioscopically

for proof of complete disappearance of the defect and its continued absence.

Any case of either duodenal or gastric ulcer that fails to respond to ideal medical treatment must be individualized.

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ALLERGIC DISEASES OCCURRING WITH TUBERCULOSIS

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If the importance of a subject may be judged by the frequency with which it appears in current literature, this is one of minor consequence. However, since the literature is not overly filled with discussions of these maladies occurring concomitantly, it would seem appropriate to contribute a few more cases of allergic diseases complicating tuberculosis.

Most of the statistics reported are on the occurrence of asthma and tuberculosis without reference to other allergic diseases and they vary greatly. Harkavy and Hebal¹ proved tuberculosis in 40 of 400 asthmatics—a rather high percentage. Shroder² found 30 cases of asthma among 4716 cases of tuberculosis (0.7%). Rackemann³, among 1074 asthmatics, found 13 cases of tuberculosis (1.2%). K'lenitz⁴ noted 8 tuberculous cases among 423 cases of asthma (1.9%). Taub⁵ found 8 cases with clinical and x-ray evidence of pulmonary tuberculosis in 100 asthmatics. Reisman and Mason⁶ report positive tuberculin tests in 38% of 158 children with asthma and in only 17% of non-asthmatic children. From these figures we find a great discrepancy in the percentage occurrence of asthma and tuberculosis.

Lichtenstein⁷ in studying the effect of treatment of hay fever in tuberculous patients, reports "about" 10 cases of ragweed pollenosis out of "about" 1000 cases of tuberculosis. There seems to be no other reference to the occurrence of hay fever in tuberculosis, so percentages cannot be compared with the figures here presented.

Conflicting opinions exist regarding the etiological relationship between asthma and tuberculosis. Some formerly believed that the

presence of one of these conditions precludes the occurrence of the other. Others have gone to the other extent by claiming that tuberculosis may be the direct cause of asthma; views all the way from one extreme to the other have been reported. My experience makes me take the middle ground; they occur together not infrequently, and there appears to be no justification for the belief that tuberculosis plays an important role in the etiology of asthma, or vice versa.

This study is based on the patients admitted to the Southern Pacific Tuberculosis Sanatorium; employees upon whom the diagnosis of tuberculosis has been made, are sent here from all over the Pacific system of this railroad, which includes Oregon, California, Nevada, Utah, Arizona and New Mexico. Theoretically, only patients with tuberculosis are admitted. There have been 329 admissions; of this number there were 5 asthmatics who had no demonstrable active tuberculous lesions, 3 with neither tuberculosis, nor asthma. This leaves 321 proven cases of tuberculosis.

Thus when the 5 non-tuberculous asthmatics and the 3 that had neither tuberculosis nor allergic diseases are excluded, allergic diseases occurred in 17 of the remaining 321 tuberculous patients or 5.3%. The term "non-tuberculous" is used here to mean that there was no clinical, laboratory or x-ray evidence of active tuberculosis. One of the non-tuberculous asthmatic patients had pneumoconiosis with asthma; one had asthma and was admitted to convalesce from an empyema following lobar pneumonia; and in the remaining 5 asthmatics there was x-ray evidence of calcified hilar nodes, a pleural cap or some increased peribronchial markings and no evidence of active tuberculosis. Hence, they are classed here as non-tuberculous although admitted as patients with tuberculosis. While the number of allergic cases is limited, the comparison with the number of tuberculous cases makes it significant and our percentage is somewhat higher than others quoted above. Furthermore, in a previous communication, I² have pointed out that in our geographical location, allergic manifestations are a little more prevalent than in the country at large, notwithstanding the fact that several prominent allergists do not agree with that contention.

TABLE I.

Total Number of Patients	Total Non-T.B.	Total Proven T.B.	Total Allergic Patients	Total Allergic Non T.B. P'nts	Total Allergic T.B. Patients
329	8	321	23	6	17
MANIFESTATION OF ALLERGY OCCURRING IN THE 17 TUBERCULOUS PATIENTS					
Hay Fever		Asthma		Urticaria	
12		4		3	

TABLE II.

HAY FEVER AND TUBERCULOSIS								
Patient Number	Classification T. B.	Sputum For T.B.	Asthma	Pollen Sensitive	Food Sensitive	Treated with Pollen	Result H.F.	Condition T.B. on Discharge
5	Advanced	Positive	Yes	3	Yes	Yes	Fair	Improved
10	Far Advanced	Positive	No	3	Yes	Yes	Good	Improved
36	Far Advanced	Positive	Yes	3	Questionable	Yes	Good	Dead
43	Minimal	Positive	No	3	No	Yes	Good	Arrested
122	Questionable	Negative	No	3	No	Yes	Excel.	Arrested
133	Advanced	Positive	No	2	No	Yes	Good	Arrested
196	Minimal	Negative	No	3	Yes	Yes		
236	Advanced	Positive	No	3	No	Yes	Good	Improved
264	Far Advanced	Positive	Yes	1	No	Yes	Good	Improved
276	Advanced	Positive	No	3	No	Yes	Good	Arrested
312	Advanced	Positive	No	12	No	Yes	Good	Quiescent
73	Far Advanced	Positive	Yes	4	Yes	Yes	Fair	Dead

TABLE III.

ASTHMA AND TUBERCULOSIS								
Patient Number	Active T.B.	Classifi- cation T.B.	Sputum for T.B.	Sensitive To Pollens	Sensitive To Foods	Treated with Pollen	Result Asthma	Condition T.B. on Discharge
5	Yes	Far Advanced	Positive	Yes	Yes	Yes	Good	Improved
73	Yes	Advanced	Positive	Yes	Yes	Yes	Fair	Dead
120	No	-----	Negative	No	No	No	Fair	Improved
145	No	-----	Negative	Yes	Yes	Yes	Good	Improved
159	No	-----	Negative	Yes	Yes	Yes	Excel.	Mark. Improve.
259	No	-----	Negative	No	No	No	Fair	Improved
264	Yes	Far Advanced	Positive	Yes	No	Yes	Good	Improved
337	No	Minimal	Negative	Yes	Yes	Yes	Excel.	Improved

Table I shows the incidence of three manifestations of allergy—12 had seasonal hay fever, 8 had asthma (4 of whom had no active tuberculosis, yet they show in table III) and 3 had urticaria—granting that urticaria is an allergic manifestation.

One of the urticaria patients has diabetes complicating his tuberculosis. A different brand of insulin from that he had been taking was used. After several days he developed urticaria. Upon returning to his original brand, the urticaria disappeared. Intracutaneous tests with both brands showed negative to his original brand while the one he was taking when he developed the urticaria was strongly positive. Administration of the latter subsequently caused a recurrence of his urticaria. The other two urticarias offer nothing of special interest.

The treatment of hay fever in the tuberculous differs none from its treatment elsewhere; this has been pointed out by Lichtenstein⁷. Pulmonary tuberculosis is no contraindication to the parenteral administration of pollen extracts. On the contrary, it makes its treatment more imperative than in the so-called normal

patient because of the untoward effect hay fever paroxysms have on the progress of the lung condition. Lichtenstein⁷ showed that pulmonary tuberculosis was more rapidly progressive in patients with hay fever which was not treated than in the patients who had no hay fever or in those who had hay fever successfully treated.

From table II it is seen that all of the seasonal hay fever patients were treated with pollen injections in what is usually called the accepted method. Usual dosage was used. Good to excellent results in controlling hay fever symptoms were obtained in all patients treated except one. Of greater interest, however, is the effect this treatment has on the tuberculous lung. One of the 9 died in the institution. He had hopelessly far advanced tuberculosis when admitted. Five were discharged with pulmonary condition arrested. The tuberculosis in the remaining is improving; 1 has been discharged and is continuing his effective pneumothorax as an out patient. One had a chronic, slowly progressive fibroid lesion; his lung condition is such that he has been able to return to work. The third patient, who also

has lues and renal tuberculosis was considered unfit for thoracoplasty a year ago. He has now had the operation and been discharged in good condition, so obviously his pollen therapy has had no adverse influence on the healing of his pulmonary lesion.

These few cases add more weight to the contention that parenteral administration of pollen extracts has no untoward effect on the tuberculous lesions, since all, except the one who was hopeless at the start, have had marked improvement in pulmonary condition while being treated with pollen extracts.

For the good of the tuberculosis, it is imperative to treat their hay fever. It is of much greater importance to treat asthma effectively in pulmonary tuberculosis. There is probably no complication in tuberculosis that will make an arrest of the pulmonary disease more unlikely than asthma, not excepting diabetes and syphilis.

It will be noted in table III that 4 of the asthma patients had no active pulmonary tuberculosis and these 4 do not show in table I. Of the remaining 4 case No. 264 appears also in the hay fever group. He is the patient mentioned above who had syphilis, renal tuberculosis and who has had a thoracoplasty. His asthma occurs very rarely as a complication of seasonal hay fever. Case No. 5 also in the hay fever group is the one described above with the fibroid phthisis. His asthma was of much greater importance than was his hay fever and while he has returned to work, the present condition of his asthma is unknown to us. Case No. 7 was a far advanced tuberculous case on admission, with rapidly progressive lesions. His asthma complicated seasonal hay fever; treatment was fairly successful in keeping him free from hay fever and asthma until he died from tuberculosis.

Of the 5 without active tuberculosis, 4 reacted well to pollen therapy and avoidance of other offenders, non-specific measures, climatic changes (most of them were sent in from elsewhere on the Southern Pacific Lines) etc. One with pneumoconiosis was discharged to return to work in Oregon; with the onset of winter his asthma recurred and he returned to the sanatorium. Changes of climate has caused a marked beneficial change in his asthma.

In no case was there any evidence to show that the pulmonary lesion was aggravated nor that a latent tuberculosis had been activated while his asthma was being treated.

Summary and Conclusions

So few references are found of allergic diseases complicating tuberculosis, it seemed timely to contribute a few more cases of these diseases in combination.

Analysis is made of 17 allergic patients among 321 cases of tuberculosis (5.3%), 12 hay fever, 4 asthma and 3 urticaria.

Untreated allergy in tuberculosis makes the prognosis of the tuberculosis graver.

Conversely pollen treatment per se does not influence the pulmonary lesion adversely.

Treatment of allergy in tuberculosis does not differ from its treatment in any other patient.

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PULMONARY COMPLICATIONS IN ATROPHIC ARTHRITIS

A Report of Two Cases

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In a survey of 250 records of atrophic arthritis of the Desert Sanatorium, 17 cases had histories of acute and chronic non-tuberculous pulmonary infection, and 6 had pulmonary episodes while under treatment. The question immediately arose as to whether pulmonary infection could have played a specific role in these cases.

Two methods of approaching the problem were possible: A statistical survey, or a detailed analysis of a few cases that had been observed over a long period of time. A statistical survey, while yielding certain information, would have been subject to the limitations met in dealing with old case records. As many of these patients had either not been

seen by the present staff, or were no longer under observation, or both, it was decided to use 2 cases because of the length of time they had been under continuous observation, both before and after pulmonary infection occurring in the sanatorium.

The literature abounds in material on foci of infection in relation to arthritis. Since the day of Frank Billings waves of enthusiasm for the removal of focal infections have swept the medical field. Although striking recoveries have followed eradication of infections results frequently have been disappointing. Many medical men still hold the opinion, however, that atrophic arthritis is an infectious disease, and that local infections play an important part both in initiating and continuing it. There has been a neglect of the lung as a possible source of infection. Recent literature on arthritis has practically nothing on the subject. Lack of interest in infections of the lung may be due to its inaccessibility to surgical and medical therapeutic procedures. Cecil and Archer¹ "have never seen a single case of infectious arthritis that could be definitely attributed to pulmonary infection." There is, however, a school of thought in France that feels there is a special type of arthritis associated with pulmonary tuberculosis. Several workers have stressed the limitations of the infection theory.

Pemberton², 10 years ago, pointed out that the arthritic is prone to develop local infections, and as the arthritis improves, even obviously infected areas may become healthy again without local therapy.

Both patients to be discussed have had foci of infection throughout most of their illnesses. Both have had the tonsils early incriminated and removed, infected teeth removed, and have had signs of infection of the lungs. Both are suffering from exceedingly severe chronic progressive atrophic arthritis. One has involvement chiefly of the spine and hips and the other of the peripheral joints.

Case 1 is a white unmarried male, 37, with a progressive spondyloarthritis ankylopoetica (atrophic arthritis of the spine) with involvement also of the hips, shoulders, knees, and temporo-mandibular joints. He also has had an ischio-rectal abscess, first appearing 3 years after the onset of the arthritis, and recurrent attacks of iritis.

The past history is non-contributory. He gives no history of repeated colds, recurrent bronchitis, or chronic sinusitis.

His mother and a maternal uncle died of pulmonary tuberculosis.

He entered the sanatorium in October, 1933, extremely debilitated. Excepting his joints, an irregular left pupil, and a discharging anal sinus, physical examination was negative. His blood pressure was 104/70. Blood counts were normal save for a slight increase in white cells. His urine showed one plus albumin, occasional red and white blood cells, and 2 to 5 hyalin casts per high power field. The serology was negative. An intracutaneous tuberculin test was positive to .001 mg. O. T. The sedimentation rate was 80 at the end of 1 hour by the Westergren method. A film of his chest showed healed primary tuberculosis.

He was given blood transfusions with slight temporary improvement; but his condition remained nearly static until August, 1934 when an unsuccessful attempt was made to clean up the draining rectal abscess, and he began to lose ground. By the first week in November he had abdominal distress, iritis of the left eye, generalized aching and a productive cough. A chest film showed nothing new. Sputum examination revealed a variety of organisms. No acid-fast bacilli were seen on smears, and guinea pig inoculation was negative for tuberculosis. His temperature which had been rarely over 99.4° went to 100.4° each day. On November 13 fine rales were heard below the hilar area in the left interscapular region. X-ray examination showed a basal patchy involvement and a dense interlobar fissure on the left. By November 26th clinical and x-ray evidence existed of a right central pneumonia. The left chest was now entirely clear. The temperature fell during the following week, and he seemed to have no ill effects from the pneumonia. An x-ray picture on the 4th of December showed the lungs practically normal. During this episode of about 1 month, his white count had ranged between 12,000 and 32,000, and the sedimentation rate had risen to 160. Immediately after this he developed a low grade cellulitis of the left buttock. This subsided after a week, and was followed by profuse drainage from the rectal abscess.

His condition changed little throughout the next year. In spite of efforts at prevention, his

knees and hips became stiffer. In the fall of 1935 the rectal abscess healed spontaneously and completely and he has been almost afebrile. For the past 4 months his general condition has definitely improved.

As the pneumonia was migratory and finally in a central location, certain questions may be raised as to its nature. It is possible that a low grade chronic infection near the hilum had existed, and that the debilitated state permitted it to spread. Inasmuch as a relatively large amount of pathologic change must be present to show on films, this possibility cannot be excluded. Features of this case suggest tuberculosis, but sputum examinations and guinea pig inoculations were negative for tubercle bacilli. Furthermore, biopsy of rectal abscess tissue revealed no tuberculosis. A most reasonable assumption is that this episode was an intercurrent migrating bronchopneumonia differing little from that in other patients in similarly debilitated conditions regardless of the nature of the underlying diseases. As clinical evidence did not show that this process had direct effect on the joints, it is unwarranted to maintain that it bore an etiological relation to the arthritis.

The next case is one with a recurrent broncho-pneumonia and pleurisy of a certain area, always with the patient's menses—in 5 of 7 successive menstrual periods. In 4 there were signs and symptoms of pleural involvement, and in 2 of the late attacks there was x-ray and clinical evidence of a patch of bronchopneumonia in the right lower lobe.

Case 2 is a married woman of 25 with severe atrophic arthritis for the past 4 years which began following an interesting sequence of events: Diseased tonsils during her only pregnancy, a post-partum neuritis, tonsillectomy, mild scarlet fever and then arthritis. All this occurred within a few months. In spite of various therapeutic procedures the arthritis has progressed steadily, and when she came to us in October, 1934, in the third year of her disease, practically every peripheral joint was involved as well as the temporo-mandibular joints and the cervical spine.

Her past history is non-contributory. She has not been subject to repeated colds, bronchitis, or sinus infections.

Her maternal grandmother developed a severe

form of arthritis when she was past 60 years of age.

Excepting for the joints physical examination of the patient was not remarkable. The lungs and the heart seemed normal in all respects. Her blood pressure was 112/76.

Her blood count was normal except for hemoglobin of 81%. Her urine was normal. The sedimentation rate by the Westergren method was 165 at the end of 1 hour. The Kahn was negative. She did not react to 0.1 mg. of O. T. intracutaneously.

She remained in the sanatorium until June, 1935. Her course was uneventful, and she made a good general improvement, gaining 15 pounds. Her hemoglobin rose to 94%, and her sedimentation rate fell to 48. Joint function, however, made little change. Once during this admission, 2 days prior to a menstrual period, she developed an acute effusion in her right knee, and a temperature of 99.8°. Her temperature at all other times was practically normal.

When the patient re-entered the sanatorium in August of the same year her joints had become stiffer. The first 2 weeks her temperature was regularly 99.2°. On September 4th she developed a temperature of 100.4°, and a complete anorexia, but no vomiting or other gastro-intestinal disturbances. The following 2 days her temperature went to 100.0°. The white blood count remained 7300. Although she felt general stiffness, there was no flare-up of joint symptoms. The next day her menses began—1 week early. Her temperature did not go above 99.0° that day, and she felt much better.

The patient was then given 4 blood transfusions—without febrile reactions. Urticaria followed the last two. Her next menstrual period was uneventful. On October 22nd she was exposed to a draft, and developed a temperature of 100.0° that evening. She was afebrile the next day and continued so for 1 week. The third day prior to her menstrual period she complained of pain in the right chest. The next day the patient's temperature went to 100.0°, and the chest had signs of fluid and consolidation at the right base. An x-ray confirmed the diagnosis, and showed evidence of an interlobar pleurisy, between the right middle and lower lobes. The next day she felt

a little better and her temperature did not go above 99.8°. The following day her menses began and her temperature became normal. An x-ray picture 4 days after this episode showed a small amount of fluid in the right costo-phrenic angle. There had been no flare-up in joint symptoms.

On November 24th, 2 days prior to a menstrual period, she complained of feeling tired, and her temperature which had been normal for several weeks went to 99.6°. The next day she felt depressed, and complained of pain in the right chest. There were no specific joint complaints. Her maximum temperature was 99.4°. The following day her menses began. She felt pretty well, and had no fever. The chest pain persisted for another day or two.

She remained completely afebrile until 2 days prior to her next menstrual period. She then complained of feeling chilly, and of a general aching. Her temperature rose to 102.0°, and her white blood count was 14,800. There were signs of consolidation in the right lower chest. The next day she felt slightly better and her temperature reached a maximum of only 99.8°. An x-ray picture showed increased density in the right lower lobe, obliteration of the right costo-phrenic angle, and an interlobar pleurisy. The following day her menses began. Her maximum temperature was 99.2° that day and she felt pretty well. There had been no flare up in any joints. She then continued practically afebrile for the next 7 weeks, during which time she had 1 uneventful menstrual period.

On February 1st, 1936, 3 days prior to the patient's next menstrual period, she complained of soreness of the muscles of her left leg. She was afebrile until the third day of this period when her temperature rose to 100.6°. She felt tired, and although she did not complain of chest pain, there was again evidence of fluid at the right base. The next day her temperature went to 101.0°, and her white blood count was 9,800. The following day she became afebrile and has remained so ever since. There have been 3 subsequent uneventful menstrual periods. With the hot weather she is making good improvement.

Although we have no control film of the patient's chest, there has been nothing in her history nor any clinical evidence during the

first year that she was under our observation that would point to an old pleural, or bronchial, involvement. A focus of infection in the lung or pleura established but not detected at the time of the first episode, seems likely. The balance between resistance and infection was so delicate that the drain of menstruation repeatedly tipped the scales temporarily toward reactivation. A recent film shows a clear lung field, but there is no evidence of pleural thickening in the right base near the costo-phrenic angle. The process seems to have subsided for the time being, but may, of course, become active if resistance is lowered. These febrile episodes had an unfavorable effect on the general condition, but there was no evidence that they affected the joints directly.

SUMMARY AND CONCLUSION

Two cases of atrophic arthritis with intercurrent pulmonary infection are reported. As far as these observations go, pneumonic processes occurring in the course of atrophic arthritis do not differ from the intercurrent infections met with in other chronic debilitating diseases nor do they bear etiologic relationship to the progress of the disease.

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MALIGNANT MELANOMA; COURSE AND TREATMENT

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(Presented before the 46th Annual Session of the Arizona State Medical Association, April 23-25, 1936).

One who has seen these simple insignificant lesions followed by extensive metastases throughout the entire organisms, cannot forget them or fail to be suspicious of such a type of growth. We limit ourselves to the malignant melanomas, secondary to the deeply pigmented moles and nevi.

Melanomas spring from cells producing melanin; therefore they may be primary growths in localities wherein such cells are found. The common sites are the skin and the eye, though they are also found in the ovary, the brain, the rectum and the subungual region of the fin-

ger and toe nails. Cases in which primary tumors of this type are found in other organs must be accepted with reservation, since in all probability they may be metastatic manifestations of a primary tumor so insignificant or present such a long time that they may have been overlooked or forgotten. Two histories will illustrate:

A male, 40, at the National Military Home, complained of being ill at ease but had no definite symptoms nor was anything definite found on physical examination. A film of the chest showed in the right lung a mossy shadow 1 cm. in diameter. A recheck of the physical examination and history revealed a small pigmented area 1 mm. in diameter in the right cheek. Four weeks before this had been infected but as it had healed the patient had paid no attention to it. It had not changed in size for many years. Death due to general metastasis took place in 6 weeks and the same histological structure was found in the metastatic and in the primary tumors.

The 2nd patient (table II) had a **small mole removed** on the left leg 7 years before. She was admitted to the hospital because of abdominal symptoms under the care of another physician. A **tumor of the mesentery** was removed and on microscopical examination was found to be a non-pigmented melano-epithelioma. It was thought that this was a primary tumor until a careful inquiry into her history revealed that she had a pigmented mole removed 7 years earlier. No other metastases were found.

In obtaining the **history** of such a growth, the patients often volunteer the statement that the lesion has been present since birth as a small area of pigmentation or that the growth has sprung up in a birth-mark or angioma which has been present since birth. Viewed in this light such lesions may be considered developmental rests and fit in with the Cohnheim theory on the origin of malignancy. In other words, they harbor cells that are "sleepers", waiting only the spark to set them off on their lawless growth. Removal of quiescent moles may show microscopic evidence of malignancy and still there may be no clinical evidence of activity. Histologically, there has been great controversy regarding the origin of the cells making up melanomata. Some pathologists have contended that they are epi-

thelial in origin, while others say they have their origin in the tactile mechanism of the nervous system.

The **theory** of the epithelial origin of melanomas is based on the fact that pigmented cells occur normally in the "stratum germinativum" of the epidermis. Apparently some of these tumors seem to spring from the basal cells of this layer. The work of Masson is suggestive of the neurogenic origin since he found 2 possible sources, the dendritic cells in the epidermis and the nevus cells of the derma. Furthermore, he has demonstrated that there is an abundance of neuritis in cellular nevi and in the duplications of Meissner's corpuscles. Therefore, he is of the opinion that nevi are neuromas involving the endings of peripheral nerves. On the other hand, Broders and Fletcher have advanced the suggestion that since the skin and the nervous system develop from the ectoderm, nevus cells may be neuro-epithelial in nature.

The **common nevus** is a flat, pigmented spot, but when the nevus cells take on growth it gradually becomes elevated. Local hypertrichosis and hyperplasia of the sebaceous glands are occasionally associated with melanotic nevi. Pigmentation of the skin is sometimes seen with a **neuro-fibroma** arising from the Schwann cells in a peripheral nevus. These tumors are usually elevated, pedunculated and multiple and represent the entity known as Von Recklinghausen's disease. When these undergo malignant change they are termed neuro-fibrosarcomata. The color of the nevus depends on the amount of melanin present in the epidermis and in the histiocytes of the derma. It varies from yellow and brown to a deep blue-black.

Malignant tumors arising from pigmented nevi are known as **melano-blastomas** or melano-epitheliomas. The old term of melano-sarcoma has been discarded since these growths spring from the ectoderm rather than the mesoderm. Histologically, melanomas are of two cell types, the polymorphous round cell and the spindle cell. Though both are very malignant, the former is the more so; the cells are immature and the degree of anaplasia usually points to a grade IV malignancy. They are noted for their power of rapid growth, deep infiltration and widespread metastasis. Indeed the metastasis may be so great as to

completely overshadow the insignificant primary lesion.

One is struck by the great variability in the **clinical course** of these patients. A great number of them give histories of having lesions since birth, while many date the pigmented area to a trivial injury such as a scratch. In the great majority of patients the pretreatment phase is 10 or more years—naturally one asks what is the relationship of trauma. This is an exceedingly important question especially from a medico-legal standpoint. Scratching and cutting, followed by infection, mild in nature but enough to open the protective wall, seem to set the ball rolling. There is a gradual increase in the size of the tumors with no tendency toward healing. Men while shaving have accidentally cut quiescent moles or a tinkering barber who delights in pulling out ingrown hairs has sometimes given the impetus to growth. Then again, patients may have small unrecognized lesions on the scalp which they have accidentally bruised in combing or brushing the hair, as was shown in one of the cases in this series (table III, case 10). Writing about the influence of trauma, Herver describes its effect in the colored races of the upper Nile. Malignant melanomata are supposedly rare in the negro, but in the colored races of the upper Nile he has seen 47 cases in a 5 year period—35 of these were on the lower extremities and 17 on the soles of the feet. The reason for this was that these people going bare-legged and bare-footed are subjected to repeated trauma from thorns. The American negro wears shoes and is not subject to those disturbances. Two of our cases (table II, case 17 and table III, case 6) gave histories of injuries to the heel and sole in non-pigmented areas from the nails in shoes. Though a single massive injury may provoke growth, the usual history is of chronic irritation from constant rubbing over a long period.

When once under way, the **disease is progressive**. The rapidity depends upon the method of spread. Growth may be local and remain so for months or years; even with metastases to the regional nodes the time for a final termination may be years; but too often the course may be fulminating, invading the blood stream directly with a massive, diffuse involvement of all the organs of the body. Direct extension through the blood stream with

clinical manifestations of activity may occasionally be much delayed. A familiar example is seen in the eye, where there has been a cure of the tumor locally after enucleation still the patient dies of liver metastasis 10 to 25 years later. Undoubtedly the spread must have taken place prior to or at the time of the operation. Why there should be such a delay is an unanswered question. Generalization through the vascular system takes place in 1 of 3 ways:

Through the thoracic duct after the lymphatics are full; by direct extension into a vein in the proximity of the growth, and through the capillaries in the growth itself.

Handley, who has made an intensive study of these lesions, insists that **the mode of spread** is exactly the same as in carcinoma of the breast—lymphatic permeation. This particular type of growth lends itself admirably to direct study of gross specimens because of the pigmentation. He has demonstrated definitely that the primary spread is by lymphatic permeation. In his opinion vascular extension are phenomena seen late in the disease. However, there are exceptions to every rule, as is noted in table III, case 20, and in those patients with ocular melanomata coming back with extensive liver involvement with no apparent lymphatic manifestation.

One of the most remarkable cases illustrative of direct vascular extension is reported by Parkes-Weber. His patient was a pregnant mother who died of malignant melanoma. A living **child** was born and it died shortly afterward from **melanotic** metastasis to the liver. Here the extension was through the placenta, directly into the umbilical vein. Hart & Crawford report a patient who complained of a pigmented growth in the throat involving the tonsil. Four months before he had injured a mole on his right ankle. Wilbur and Hartman have recently published an article on delayed manifestation of metastatic growths from malignant melanomas wherein they cite 10 cases in which the appearance of the secondary growth ranged from 5 to 13 years post-operatively. They reviewed the subject thoroughly and feel that metastatic cells find lodgment in distant locations and grow only when the natural resistance of the receptive organ has been lowered. Cohnheim said this occurred only "when physiologic metabolism of the tis-

sues is altered by age, atrophy and inflammation."

Why do some of the metastases continue to remain pigmented, while in others the pigmentation in the metastatic cell is lost, giving a non-pigmented secondary? Is it a reversion to the primary nerve cell? Such non-pigmented moles closely resemble neuro-sarcomata.

Diagnosis: Which moles are dangerous? Most individuals have one or more. Adair quoting Pack says that the average individual has 20 pigmented moles over the body; obviously not all of these are dangerous. Fortunately, practically all of them are the brown type and do not cause much disturbance. However, we do occasionally see patients in whom black moles grow from previously brown ones. **Clinically, the dangerous mole is jet black, smooth and glistening.** However, one must not overlook the deeply pigmented hairy mole or the angiomata in the adult, both of which may undergo malignant change. Where such a change begins in a nevus or hairy mole, it is impossible to determine its malignancy except by excision and microscopic examination. Adair has emphasized that these quiescent congenital lesions when excised, even though they are innocent in appearance, still are microscopically exceedingly malignant, awaiting only the necessary stimulus to start them off. In other words, the clinical history is of the greatest significance. A history of slight enlargement, increased vascularity and pigmentation is of extreme importance. With spontaneous ulceration and bleeding or when ulceration and bleeding follow a trivial injury malignancy is almost certain. Obviously, it is exceedingly dangerous to resort to simple biopsy as this may be followed by rapid metastasis; if microscopic evidence is necessary, then a wide excision of the primary growth is the only feasible and justifiable way of verifying the clinical diagnosis.

Treatment of these lesions has been notoriously unsatisfactory. Theoretically, surgical excision should be the treatment of choice but even under this regime the results are not "rosy." Inasmuch as the primary lesion is often so innocent in appearance, the majority of patients have had a variety of treatments, none effective. They vary from local applications of caustics, ointments and CO₂ snow to electro-desiccation and radiation either with x-rays

or radium⁴; while in many others there apparently has been adequate surgery local recurrence or distant metastasis has taken place. The reason for such a variety of treatment is easily understood when the lesion is on an exposed surface of the body such as the face. These patients come to physicians for cosmetic reasons. They want their moles removed with no scarring. Naturally the simplest way is by the use of desiccation or by CO₂ snow. It requires a great deal of persuasion to convince a patient that a small, insignificant but suspicious lesion on the face, the eyelid or the lip should have a wide and possibly mutilating surgical operation. Consequently, patients try everything else first.

A review of the literature on **surgical treatment** is confusing; some men advocate it while others are not so sure of its efficacy. Thus Wood, a radiologist, says that surgery is the only effective treatment of melanotic tumors. The late Dr. Bloodgood advised surgical removal of benign moles but for the malignant melanoma he advised the use of the cautery. Handley also advises surgery, removing not only the primary tumor but also the neighboring nodes. Recently Adair has given his experiences at the Memorial Hospital; he is a strong advocate of wide surgical excision. Scott uses the hot loop cautery with excellent results.

Pigmented malignant melanomas are **resistant to radiation**. That these lesions spring from nerve structures may account for this. Stewart says that melanomas are uniformly highly radio-resistant with only about 2% having some degree of sensitivity. However, widespread metastasis to the skin and subcutaneous tissues may at times be radio-sensitive. Despite this fact, radiologists have been called upon to treat these lesions largely because of the poor surgical results and because of the recurrent and metastatic lesions that have been referred to them. Wood, Coley and Hougset consider the use of x-ray and radium as primary curative agents harmful and contraindicated, while Arzts, Fuhs and Werner advise surgery followed by prophylactic radiation. Pfahler rarely uses radiation as a primary method but depends on electro-coagulation. Nevertheless, patients with metastasis to the regional nodes have been treated by McEwen, Holfelder, Evans and Leucutia with success.

Evans and Leucutia stress that the radiation to the primary lesion must be caustic in nature and must produce local necrosis. On the other hand, where the lesion is large and it is impossible to give a thorough dose to the deeper layers, they give preoperative radiation followed by radical excision. Adair speaking of the therapy, mentions that only 2.5% of their cases responded to radiation. In his group there were 9, in whom the complete therapy was radiation, who survived the 5 year period, though at present only 3 of these are free from the disease. At Radium Hemmet in Stockholm combined electro-surgical and radio-therapeutic technique is in use. Massive doses of radium are given preoperatively after which the primary lesion is either destroyed by electro-coagulation or removed by electro-surgical excision.

Electro-desiccation is a favorite method of attack by dermatologists. Most writers decry the method since it is too conservative and is thus harmful in its results, as it leads to local recurrence and widespread metastasis. Since the nevus cells are frequently deep in the derma and not well localized, they are not reached; consequently recurrence is common. Electro-coagulation has also been used by many men but the method has been condemned by Amadon and Adair. They contend that one cannot tell the extent of the lesion and for that reason its use, like electro-desiccation, is followed by local recurrence. Pfahler, on the other hand, uses it and recommends it, but insists that it must be done properly. If done improperly it is like inadequate surgery. Amadon feels that dissemination is due to the dilation of the lymphatics by heat and the generation of tissue steam which forces plugs of cells into the circulation. Theoretically this is possible, but if it were so, how about the thousands of cases of various epitheliomata that are treated in a like manner with no recurrence or metastasis. Obviously, recurrence is due to the failure to destroy the involved skin, fascia and other deeper structures. Bloodgood advised cautery excisions, while Percy has long been an advocate of its efficacy.

Other methods of treatment have been used also, namely, **Coley's toxins** and **colloidal lead**. In Adair's experience the use of toxins has

TABLE I. RESULTS OF TREATMENT OF MALIGNANT MELANOMA

AUTHOR	WHEN REPORTED	NUMBER OF CASES	METHOD OF TREATMENT	NUMBER OF CURES
Broders & McCarthy	1916	70	surgery	1-5 years
Coley & Houget	1916	95 (81 personal) (14 from literature)	surgery, radiation, toxins	3-4 to 8 years
Bloodgood	1922	200	surgery (cold knife and cautery)	3-5 years
	30 years experience	(a) 36—no nodes		1-5 years
		(b) 31—with nodes	surgery	(a) 18 followed—7 free from melanoma at 2.5 years
		24—in all stages of the disease	x-ray	(b) 29 followed—1 free from disease at 2.5 years
	1925	(a) 70 followed 3 years		(a) 3-5 years, 12.5%—no evidence of disease
		(b) 49 followed 5 years	electro-surgery and radiation (tele-radium)	(b) 3-4 to 4.5 years
		39	cautery surgery	(c) 18—dead from metastasis
Evans & Leucutia	1931	(a) 70 primary operable	surgery and radiation	(a) 32-3 years, 45.1% (4 treated by electric surgery and all are well)
Scharnagel	1933	(b) 55 recurrent operable	surgery and radiation	(b) 19-years, 37.7%
		(c) 27 primary	radiation alone	(a) 23-5 years, 33%
Scott	1934	(a) 27 primary	electro-surgery and radiation	(b) 15-5 years, 10%
Adair	1935	(b) 23 recurrent		(c) 9-5 years, 2.5%—3 died later of melanoma
Solland, Costolow & Meland	1936			(c) 3 have recurrence now—3 free from recurrence
				(a) 9-5 years, 33%—4 died later of melanoma
				1 is living with metastasis—4 free from disease
				(b) 3-5 years, 13%

been disappointing; no patient has survived 5 years following its use. Brown reports a case from the Mayo Clinic in which there were large metastatic nodes in the groin that failed to respond to irradiation, in which the use of colloidal lead phosphate was followed by complete disappearance of all evidence of the disease with a survival of 4 years and 10 months at the time the report was made. We have used lead in 2 cases, both failures; the disease was well advanced in both.

What are the results of surgical and radiological treatment?

During the last 10 years our group has seen **250 patients with pigmented lesions**; of these 50 have been classed as belonging to the group of malignant melanomas. The others have been benign moles and pigmented keratoses, lesions that are ordinarily not particularly dangerous. In our work we have used electro-coagulation, electro-surgical excision and radiation therapy. Radiation therapy alone at times has been followed by complete disappearance of the primary tumor but this does not mean that the patient has recovered. This form of treatment has been used mostly as a palliative method in recurrent cases. We have seen enlarged nodes completely disappear and have then seen the patient die of metastases to the liver. Therefore, we feel that it has a definite beneficial effect on some tumors by controlling its growth, in this way prolonging life. Needless to say, x-ray therapy has a marked analgesic effect in many individuals suffering pain. Furthermore, despite the fact that melanomata are not as a rule sensitive to radiation, one never knows which patient will respond and which will not until a therapeutic test is given. Though surgery gives the greatest 5 year survivals, there is enough evidence at hand to warrant the use of x-ray and radium as aids preoperatively, and postoperatively in the operable group, but their greatest use is as palliative agents in recurrences and distant metastases. The worst thing one can do to these poor victims is to tell them nothing can be done. A state of defeatism supervenes with loss of faith in the profession on the part of the patient and his kin. The accompanying tables give a brief resume of the history and clinical course of our cases. Table II represents the primary group while table III is the recurrent or metastatic group.

Prognosis: Despite the apparently favorable results of surgery, the fact remains that a great number of patients surviving the 5 year period succumb to the disease. Wilbur and Hartman reporting on the delayed manifestations of melanomata emphasize this point as does the fact that practically all patients with ocular melanomata die of metastasis to the liver if they live long enough. The cells of melanomata are persistent and may remain tucked away in some safe place for years until the proper time comes and growth ensues with fatal outcome. When once ulceration and bleeding of the primary lesion has taken place, one may be quite sure that dissemination has already taken place. A 5 year survival of freedom from clinical manifestations of the disease means little as far as eradication is concerned. In our series of 9 who passed the 5 year period, 4 later died of melanoma and 1 is living with metastases.

What then is the best treatment in our opinion? This must be answered by reference to specific conditions as they arise.

In the first place, from a prophylactic standpoint it is perfectly obvious that one cannot destroy every mole that is seen. To one lesion that becomes malignant there are thousands that remain benign. Therefore one may be safe in saying that only those **pigmented lesions** found in locations that they may be **subject to irritation or trauma** need be taken care of prophylactically—such as are on the scalp subject to bruising from combing and brushing the hair, on the forehead from rubbing by a tight hat band, on the back from irritation of suspenders, on the leg from a tight garter or on the foot from a rubbing shoe or a nail. These should be cared for before activity takes place. When the lesion is already active, no matter where located, the primary tumor should be removed widely by electro-surgery, combined with prophylactic radiation. You will note that we say electro-surgery. While there is no direct evidence that the use of the cold knife is inferior to the endotherm or the cautery loop if excision is done properly to include a wide margin of skin, fascia and muscle if need be, a perusal of the literature and our own experience leads us to recommend electro-surgery. Even though the ultimate outcome as far as complete recovery is no differ-

TABLE II. PRIMARY MALIGNANT MELANOMA

PRIMARY GROWTH

Case	Age—Sex	Site—Type	Size	Duration Before Treatment	Previous Treatment	Pathology	Findings	Present Treatment	Duration of life after Treatment	Outcome
1.W.	Not stated	Right Leg Mole	Apple	10 years Growing, gradually	Ointment's and caustics	No record	Pigmented, ulcerated tumor right leg. Secondary anemia. Nodes left groin.	Palliative x-ray treatment	5.5 years	Dead. General metastasis
2.P.	40 F.	Sole right foot Angioma	Not stated	2 years	None	Melano-epith.	Angioma	Radium packs (pre-op.) Caulexy excision	1½ years	Dead. General metastasis
3.H.	Not stated	Back Mole	Small	Many years Irritated by corset	None	No record	Mole—Black	X-ray therapy to mole. X-ray therapy to metastatic nodes neck.	Followed 4 years, then metastasis to neck	Local lesion healed. Lost track of after 4 years. Undoubtedly died.
4.H.	40 F.	Left cheek Mole	Not stated	1 year	Cauterized with acid	No record	Ulcerating mole with infiltrating edges. Nodes left axilla.	X-ray therapy	2 years	Lost track after 2 years.
5.B.	Not stated	Right eye		6 months. Loss of sight	Removal of eye	Melano-epith.	Recently removed right eye.	Radium packed into socket	Lost track of	
6.B.	45 F.	Right temple Mole	5x7 cm.	Many years. 6 months ago began to grow rapidly	Local applications	No record	Ulcerating mass 5x7 right temple Bleeds easily. Nodes right neck.	X-ray therapy to lesion and nodes. Electro-coagulation	4 years	Dead. General metastasis. Local lesion healed
7.B.	16 M.	Right cheek Mole	1.5x1 cm.	6 years. Growing gradually	None	Not stated	Mole 1.5x1 cm., deeply pigmented. Marked enlargement of 4 submental lymph nodes.	Radium to primary lesion. X-ray therapy to nodes.	Followed 7 years	Primary lesion healed and nodes disappeared. Well at present.
8.Mc.	Not stated	Instep left foot Mole	3.5x4 cm.	Many years	Local applications	Not stated	Ulcerating, pigmented tumor 3.5x4 cm.	X-ray therapy and radium. Electro-coagulation	Followed 3 years.	Local area healed. Lost track of.
9.C.	Not stated	Right temple Mole	1x1.5 cm.	1 year	Not stated	Not stated	Ulcerated pigmented tumor 3.5x4 cm.	Radium	Local lesion healed. Lost track of.	
10.L.	44 M.	Left chest Birth-mark	Lima bean	Birth. Pimple appeared in lesion 9 months ago. It began growing.	Not stated		Ulcerated, bleeding pigmented tumor 2 cm. diam. Node in left axilla 1 cm. diam.	Radium and elec-8 months tro-coagulation to local lesion. X-ray therapy to nodes in axilla.	Dead. General metastasis. Local lesion healed.	
11.M.	24 M.	Left back leg	2 cm. diam.	Birth. Doubled in size past year	None	Me'lano-epith. Nodes non pigmented	Pigmented tumor 1x1x.5 cm.	Radium and ex-8 years cision with radio knife.	Dead. General metastasis. Local lesion healed. 3 yrs. ago nodes appeared in groin; removed surgically. 1.5 yrs. ago mass in abdomen appeared.	
12.S.	27 F.	Right instep foot Mole	1 cm. diam.	Many years Struck it one week ago. Bleeds now. Growing	Local Applications	Not stated	Pigmented tumor 1x1x.5 cm. ulcerated and bleeding.	X-ray therapy. Wide excision radio-knife	Followed 8 years	Living and well.
13.V.	40 F.	Right eye	Not stated	Falling vision	Enucleation 2 weeks ago	Melano-sarcoma	Healing operative wound right orbit.	X-ray therapy to socket	5.5 years	Dead. General metastasis. Local lesion healed.

14.J.	77 M.	Right temple Mole	4x4 cm.	20 years. 4 months ago began to grow.	Local treatments	Not stated	Pigmented, ulcerated lesion 4x4 cm.	Radium. Electro- coagulation	Unknown	Local lesion healed. Lost track of after 6 months.
75.H.	51 F.	Back left	2.5 cm.	Since childhood	Local treatments	Me'ano- epith.	Pigmented mole 2.5 cm. diam., ulcerated, bleed- ing and infected.	Electro- coagulation. Radium to open wound.	7 years	Dead as a result of tumor in the mesentery found to be melano-epithelioma, non- pigmented. No other evi- dence of metastasis. Local lesion healed.
17.B.	45 M.	Conjunctiva Left eye		1 year. Pigmented tumor ap- peared on conjunc- tiva.	None	Melano- epith.	Small, pigmented area on conjunctiva. left eye.	Excision of tumor 8 years from conjunc- tiva.		Still living but in poor health. Suffering from anemia probably due to metastasis.
16.S.	62 F.	Sole of foot Mole	2 cm. diam.	2 years. Followed injury from nail in shoe.	Excision	Me'ano- epith.	Ulcerating, pigmented tumor, 2 cm. diam. Hard, fixed, round mass in groin.	Radium and electro-coagula- tion to local area. X-ray therapy to nodes.	4 years	Dead. General metastasis. Local lesion healed.
18.S.	70 F.	Right side face Mole	.5 cm.	Not stated	Desiccation	Me'ano- epith.	Ulcerated, pigmented tumor .5 cm. at angle of nose.	Excision radium	7 years	Living and well. Local le- sion entirely healed.
19.A.	19 M.	Upper and lower lid Right eye Mole	5 cm. diam.	Many years. Growing rapidly now	None	Me'ano- epith.	Pigmented tumor 5 cm. diam. .5 cm. thick.	Electro-coagula- tion. Radium	Followed 6 years	Local lesion healed. Patient well.
20.O.	50 M.	Right leg Mole	3 cm.	Birth. Growing now	None	Not stated	Pigmented tumor 3 cm. wide.	Electro- coagulation	6 years	Local lesion healed. Patient well.
21.C.	59 M.	Anus Pigmented polyp	2x3 cm.	1 year Pain the last 4 months	Polyp removed	Me'ano- epith.	Firm, pigmented, cystic area 2x3 cm. right side anus.	None	Refused treatment	Unknown.
22.M.	84 F.	Right breast Mole	5 cm. diam.	.5 years. Growing rapidly	Ointments	Not stated	Multiple, small, pigment- ed tumor right breast. Multiple moles over body.	Radium. Electro- coagulation	Followed 1 year	Not known. Local lesion healed.
23.S.	67 M.	Right shoulder Birth-mark	4x6 cm.	Birth. 3 months ago began to ulcerate and pain.	Ointments	Me'ano- epith.	Birth-mark 4x6 cm. ul- cerating. Infiltration with pigmented nodules in an area 10 cm. diam. En- larged nodes right ax- illa.	Radium pack. Wide excision with radio knife. Dissection of right axilla with removal of nodes. X-ray therapy.	1 year	Died metastasis to chest. Local lesion and axilla. o.k.
24.J.	30	Right neck side Mole	2 cm.	Birth. Growing gradually	None	Me'ano- epith.	Tumor 2 cm. wide, black.	Excision radio knife.	2 years	Living and well. Healed at present.
25.T.	34 F.	Right face Mole		Years	None	Me'ano- epith.	Mole 1x.5 cm.	Electro- coagulation	1 year	Healed. Living and well at present.
26.C.	52 M.	Right eye Choroid		Blind 1 year	Refused enucleation Abram's treatments.		Blind right eye. Multiple bluish, hard nodules subcutaneous over face, scalp and trunk.	None	Unknown	Lost track of.
27.T.	60 M.	Eye		3 months	Enucleation of eye.	Me'ano- epith.	Blindness 3 months.	None	4 years	Still living. No local evi- dence of disease.

TABLE III. RECURRENT MALIGNANT MELANOMA

PRIMARY GROWTH										
Case	Age-Sex	Site-Type	Size	Duration Before Treatment	Previous Treatment	Pathology	Findings	Present Treatment	Duration of life after Treatment	Outcome
1.B.	50 M.	Head Mole	Not stated	10 years	Excised 3 times	Melano-epith.	Local recurrence in scalp. Multiple nodules over head.	X-ray radium to recurrence.	3.5 years	Dead 13.5 years after first appearance.
2.W.	67 F.	Right wrist Mole	Blackberry	2 years	Excision 1 yr. ago and 6 months ago	Melano-epith.	Multiple nodules over body.	X-ray	?	Dead. Time not known.
3.H.	40 F.	Right ear Mole	Pea	Birth.	Excision 2 yrs ago. Removal of ear 1 year ago. Local removal recently of recurrence.	Melano-epith.	Healed recent scar. Metastasis to node right neck. side of neck.	Me- X-ray nodes in right neck.	3 years	Dead. General metastasis Paraplegia.
4.M.	38 M.	Right foot Mole	.5 cm.	Many years Few months ago began to grow	Excision 2 years ago.	Melano-epith.	Recurrence in ulcer on foot, bluish in color. Nodes right groin.	on X-ray radium.		Lost track of.
5.H.	39 F.	Left breast Birth-mark	Blackberry	Birth	Electro-desiccation.	Me'ano-epith.	Local recurrence 2x4 cm.	Radium.		Well.
6.F.	26 F.	Right heel foot Mole	1 cm.	Growing slowly for 4 years. Due to injury from nail in shoe.	Excision 2 years ago.	Me'ano-epith.	Ulcer 3 cm. diam. with recurrence. Nodes right groin.	Radium locally elec. coag. Removal of nodes in groin. X-ray to groin.	10 years	Primary site healed. Died metastasis to lungs.
7.G.	9 mos. F.	Below right eye Birth-mark	3 cm.	1 month after birth	Excision 4 months ago	Me'ano-epith.	Healed with scar with recurrence 3x3 cm.			Well, considerable local telangiectasia.
8.V.	Not stated M.	Left shoulder Mole	Not stated		Excision 1 year and 2 weeks ago	Me'ano-epith.	Open wound.	X-ray to wound.		Local healing. Outcome unknown.
9.C.	42 F.	Left eyebrow Birth-mark	Not stated	Birth. Grew rapidly after picking with pin.	Excision 4 mos. ago. Removal of nodes in neck with met's. 3 mos. ago and X-ray.	Me'ano-epith.	Ulcerated recurrent growth angle left eye. Multiple bluish subcutaneous nodules over face, head and neck.	Radium over ulcerated area.	5 months	Dead. General metastasis.
10.W.	25 M.	Scalp Wart	Pea	6 weeks. Injured it while combing hair. Some bleeding.	Excision 2 mos. ago. Radium locally. Ra-epith. neck.	Me'ano-epith.	Massive ulcerating recurrence over entire head. Massive metastasis to nodes of neck. Secondary anemia.	X-ray radium colloidal lead phosphate	5 months	Dead. General metastasis.
11.H.	75 F.	Sacrum Mole	Small nut	Not stated	Cauterization of ulcerated mole 4 yrs. ago followed by local recurrences; 3 surgical excisions in past 3 yrs. X-ray therapy.	ul-Me'ano-epith. Non-pigmented	Ulcerated, cauliflower mass 5 cm. in diam. over sacrum. Subcutaneous mass 8 cm. diam. left leg. above knee. Metastasis to lungs. Neurofibromatosis.	Radium pack colloidal lead phosphate.	4 years or more.	Dead. General metastasis. Time unknown.
12.G.	52 F.	Right ovary	Not stated	3 months. 3 months ago when operated for acute appendicitis. Tumor of ovary found.	None	Me'ano-epith.	Metastasis to nodes left side of neck. Edema of the left leg.	Palliative x-ray therapy.	Unknown	Dead. Exact time unknown.

13.B.	62 M.	Back Mole	Quarter	?	Electro-desiccation of mole 1 year before.	Melano- epith.	Healed scar. Nodules subcutaneous on back lateral to the scar.	Radium x-ray excision endotherm.	Living. Has small nodules removed from time to time. These are of non-pigmented variety.
14.S.	35 F.	Right chest Mole	Not stated	Not stated	Excision of mole 3 yrs. ago. Now has pain in left lower abdomen for 6 mons.	Melano- epith.	Large, tender mass fill- ing left lower abdomen. Metastasis to femur and ilium shown by x-ray.	4 yrs. relief from pain by x-ray therapy.	Dead. General metastasis.
15.W.	61 M.	Right axilla Mole	?	Not stated	Excision of tumor right axilla 2 yrs. ago. Recurrence lo- cally. X-ray and radium to recur- rence by Dr. Was- son of Denver.	Melano- epith.	No evidence of disease.	Not treated by us—examined only.	Living and well at present.
16.S.	26 F.	Scalp Sebaceous cyst	?	10 years	Excision and radium Me'ano- by Dr. Heublein of epith. Hartford, Conn.	Melano- epith.	Wound healed.	Observation only —not treated by us.	Local lesion healed. Lost track of.
17.D.	30 F.	Back Mole	?	Birth. Growing gradually	Excision with cautery.	Melano- epith.	Wound open and sloughing.	X-ray ther. py.	Lost track of.
18.W.	49 F.	Back Mole	1 cm.	2 yrs. Growing gradually	Excision followed by Me'ano- recurrence in a few epith. weeks.	Melano- epith.		Wide excision radio-knife. Radium.	Local healing. Dead. Abdominal metastasis.
19.T.	60 F.	Left ear Mole	1 cm. 2 cm.	Not stated	Excision 6 months ago and x-ray.	operated epith.	Bluish black mass lobe Removal of ear of left ear, 4 cm. wide, and nodes with radio-knife. Nodes neck.	1 year Radium. Interstitiality	Local lesion healed. Dead. Chest metastasis.
20.D.	50 M.	Left temple Mole	1 cm.	Not stated		Melano- epith.	Small, local, bluish currulence. Nodules anterior to ear.	2 years Radium x-ray.	Still living in poor health. Abdominal metastasis.
21.K.	44 F.	Left temple Mole	1 cm.	Not stated	Excision 4 yrs. ago. Melano- 3 years ago nodes ap- peared on left side of neck.	epith.	Massive, nodular metas- tasis to glands of neck nodes. left side from ear to clavicle.	Not known X-ray to neck nodes.	Patient lost track of.
22.P.	64 M.	Lumbar region Mole	Small	Not stated	Excision 2 yrs. ago. Melano- Excision recurrence 1 yr. ago. Excision recurrences 6 months ago.	Melano- epith.	Tumor 4x4 cm. at edge of scar on back. 2nd therapy. tumor 6x8 cm. before ex- cision.	3 years X-ray	Still living but has internal metastasis. The tumors on back disappeared after therapy. Then had a me- tastasis in sternum which disappeared after therapy.
23.J.	64 M.	Left fore- arm Mole		Not stated		Not examined	Tumor left axilla 8x14x 5 cm.	About 1 year x-ray therapy.	Dead. Developed metastasis into chest.

ent, at least, there is less local recurrence when electro-surgery is used. If the lesion is on the face, especially around the eye and the lids (table II, case 19), where wide excision is refused and where it will result in marked deformity, it is justifiable to use electro-coagulation accompanied by pre- and post-operative radiation. If the lesion is small, caustic radiation as advocated by Evans and Leucutia may be used. This means a massive dose of x-rays in one or two sittings, so as to produce total destruction of all cells in the treated area. Small repeated doses are only temporizing and will lead to disaster. Where recurrence is present following surgery and where there are metastases precluding a further surgical attack, radiation should be used alone or it may be combined with colloidal lead.

Conclusions: Malignant melanomas ordinarily arise in simple pigmented lesions. They may occur at any age and are insidious in their course, but once started they are progressive. The success of treatment, when based on 5 year survival statistics, is dependent on the time of recognition, however the ultimate outcome is problematic no matter how radical one is.

* From the oncologic service of Drs. Soiland, Costolow and Meland.

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SURGICAL TREATMENT OF ARTHRITIC JOINTS

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(Read before the Annual Session of the Arizona State Medical Association, April 23-25, 1936)

On first developing rheumatic symptoms one can not realize that eventually he may have severe incapacitating deformity requiring crutches or wheel chair for locomotion. Application of appropriate orthopedic measures are as important as eradication of causes and other medical measures of relief; but, unfortunately, the importance of the treatment of deformity is often not realized until the victim has reached the derelict stage in which mechanical improvement is of the least benefit.

The surgical treatment of arthritic joints is so broad in scope that I stress here only some of the more pertinent points, hoping thereby to stimulate interest in treatment of the most economically disastrous disease of human beings. The surgical measures differ widely according to whether the disease is active and progressive or is inactive with permanent articular alterations.

Active progressive stage: Histological alterations in fibrous tissue cells, pouring out coagulable lymph; from which plastic repair result in inelastic fibrotic adhesions; and irreparable erosion of structural parts. Treatment in the active stage must be directed toward the relief of pain and the prevention of contractures. Reflex muscular spasm from painful joint irritation can be relieved best by support, immobilization and traction.

Splinting of the involved structures if thoughtfully applied and managed can give relief and preserve the most serviceable position of the joint, but such measures without consideration of indications may torture an already exhausted nervous system, or contribute to further deformity or disability. Plaster of Paris immobilization of an inflamed joint often provides remarkable relief of pain through relaxation of muscle spasm and diminution of intra-articular tension; but if applied without fixation of the joints related by muscle attach-

ments above and below the affected joint, pain may be aggravated because of added strain from the posture; or associated joints may develop deformity.

Immobilization of a painful lumbar spine must fix one or both hips. A splint to the knee should also fix the hip and the foot. Traction by weights and pulleys is an extremely useful measure in the relief of tension and contraction of inflamed joints but the apparatus must be judiciously applied, managed and removed. The Kirschner wire is now being employed successfully in relieving the contractions of arthritis.

Aspiration or drainage of acutely distended joints is often necessary, but a great deal of harm may be done by injudicious penetration of a joint. It is better to aspirate than to permit synovial distention over a long period even though reoccurrence of fluid is likely. In acute infections drainage of a knee joint is best accomplished by incisions lateral to the patella but in some cases posterior drainage is also necessary. 'Willems' treatment of active motion has not proved practicable or advisable in my practice except in one or two instances of penetrating wounds such as of gunshot which gave rise to the advocacy of the method. I believe in thorough immobilization and traction of an acutely inflamed joint whether it is draining or not.

In **acute gonorrheal joints** I find surgery and splinting often of great importance but fever therapy has greatly diminished the difficulties in this type of acute arthritis. Frequent aspiration, however, is of great assistance in the relief of pain. I never inject chemicals into the joints because they cannot reach the source of the infection and may add much to the irritation and may add much to the irritation of an already overburdened synovial membrane.

A type of septic arthritis occurs especially in the **hip joint** which I think ought to be more often drained surgically but which is seldom recognized as septic and therefore is treated non-surgically until total absorption of the head and neck occurs. The diagnosis is often sciatica. It is usually a sequel to pelvic infection, with acute severe pain and stiffness in the hip which slowly subsides after 3 to 4 weeks without spontaneous drainage. The x-ray does not show definite change for 6 to

10 weeks or until the head and neck become disintegrated and dissolved, leaving only the trochanter and a portion of the femoral neck. I believe early recognition and drainage of such hips would prevent extreme destruction.

Permanent arthritic alterations: When inflammation has ceased, a much different treatment may be used than in the acute state. Residual involvement of the joint may be in at least three areas:

The synovial membrane and accessories of the joint; the cartilage and bone of the articulation; and the periarticular structures of the joint such as tendons, ligaments, fascia and skin.

With deformity it is necessary to consider if the internal structures are sufficiently preserved to expect return of function with treatment or if the joint structures are permanently damaged, and whether to leave the ankylosis and improve the position or to reconstruct the articulation for motion.

Restoration of function of a joint stiffened but not destroyed involves splinting, traction, manipulation and sometimes open surgery. There are about as many forms of apparatus for relief of deformity in stiffened joints as there are types of stiffened joints. Various methods of applying corrective plaster casts, turnbuckles, rubber bands and a great variety of cleverly designed splints, pulleys and weights have been recommended. It is chiefly a matter of applying common sense and ingenuity together with mechanical devices that offer the most effective solution to the problem at hand. This form of treatment does not bear well with routine. An additional admonition is: Be patient; do not injure the joint; and give the tissues their full privilege of responding to the force applied by the external corrective apparatus.

Manipulation of stiffened joints is successful if intelligently done. Attempts to secure motion in a stiffened joint by forcible manipulation is likely to prove disastrous. The treatment may be successful with anesthetic in some cases and without in others.

Adhesions form in a manner which should be well understood. It is because of a lack of sufficient devotion of physicians to this subject, I believe, that gives the bone setting charlatan his opportunity to exploit the public

by diagnosing subluxations and maladjustments. Details cannot be given here but there is ample information in the literature explaining all the tricks and methods of snapping adhesions and manipulating joints for minor painful adhesions.

With **ankylosis** in which a great amount of force is necessary to produce motion, mobilization treatment must be based upon a thorough understanding of the following: The etiologic factor, the stage of progress, worthiness of outcome, and the type of ankylosis.

Tuberculous joints, of course, should not be manipulated, and no joint should receive forceful motion while there is active inflammation. Joints of multiple atrophic arthritis often improve under forcible movement—a treacherous procedure.

Some of the joints more commonly involved in **fibrous ankylosis** which respond favorably to manipulation are as follows:

1—The shoulder, for limitation of abduction and for bursitis or tendon adhesions, such as are found in peri arthritis and traumatic arthritis; 2—the ankle joint for heel cord contraction and minor adhesions resulting from sprain or fractures; 3—the wrist, hand and fingers in stiffness following wrist joint injury or in ankylosis following specific arthritis; 4—the foot, where adhesions have resulted from trauma or strained arches, and in gonorrheal arthritis; (the foot responds exceptionally well to forcible manipulation; in metatarsalgia a Canadian doctor has capitalized upon the spectacular relief afforded by clever manipulation of the tarsal, metatarsal and phalangeal joints; he is performing one of the oldest form of bonesetters tricks which an ethical physician can perform if he wishes); 5—the elbow does not respond well to stretching; splinting and traction are preferable in most cases; 6—the hip may be manipulated to correct adduction and rotation deformity but where stiffness is secondary to trauma, this joint may be entrusted to functional activity; and 7—the spine responds favorably to forcible stretching in many instances, and discussion of such procedure would be a lengthy one; forcible manipulation in well selected cases of sciatica, sacro-iliac, ilio-lumbar and lumbosacral cases of fibrositis followed by immobilization in plaster or in traction for 6 weeks often renders positive relief to a chronic back.

Open surgery is employed successfully in restoring joint function in such cases as loose bodies and cartilages, exostoses, benign tumors, and fibrosed synovia. The knee joint is especially favorable to surgical removal of pathologic tissue. The hip joint, elbow and shoulder are less commonly opened for removal of tissue obstructing motion. Loose bodies resulting from osteochondritis dessicans, loose cartilages, bursae, villous arthritis, benign tumors, exostoses and fibrotic synovia or hypertrophic osteophytes often can be removed with spectacular success.

Synovectomy has of late years become popular. The procedure dates back to Volkmann in 1877 but has been advanced by Swett¹, Ellis Jones² and others since 1922. A thorough removal of the synovial membrane, particularly in knee joints, may be done in many cases of atrophic and hypertrophic arthritis, even in some that still have a certain amount of inflammatory activity. I have used the radio knife for this dissection and find it reduces the tendency to hemorrhage and it seems that earlier use of the joint results.

Plastic measures may be employed on the extra articular structures, and in contractures of the capsule, tendons, fascia and skin. Posterior capsulotomy of the knee as practiced by Wilson is particularly useful.

Another procedure is that of Ober's method of **sectioning the fascia lata** in certain forms of chronic sciatica to lessen the tension. The fascia lata is freed along the iliac crest and stretched; the pelvis and legs are immobilized in plaster. In properly selected cases the results are remarkable.

In **all joints where the articular surfaces are beyond repair** choice must be made between osteotomy, arthrodesis and arthroplasty. The joint may be fused by arthrodesis where a painful joint exists in which arthroplasty is not favored. The hip, knee and spine are frequently benefited thereby. Monarticular affections such as osteoarthritis, progressive polyarthritis and "traumitis" often destroy articulations so that bony fusion with firm security in weight bearing as well as relief of pain is preferable to an arthroplasty where the joint may not be stable and may be painful.

Surgical mobilization of ankylosed joints by **arthroplasty** is indicated particularly in the knee, the hip and the elbow and occasionally

the jaw where there is multiple ankylosis such as two stiff hips or knees, or where an acute pyogenic infections or trauma have occurred and the indications are such that restoration of movement will be a distinct advantage.

The **arthritis deformans** type of case does not do well in respect to motion following arthroplasty but in severe cases where both legs or arms are stiffened, even partial motion is desirable and arthroplasty is indicated. There are many contraindications and careful study should be made before undertaking to mobilize a joint by arthroplasty. Tuberculosis, osteomyelitis, severe osteoporosis, epiphyseal growth and social status of the patient are factors which contraindicate arthroplasty.

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PREVENTION OF CHRONIC SINUSITIS

REA E. ASHLEY, M. D.
San Francisco

(Read before the 46th Annual Session of the Arizona State Medical Association, April 23-25, 1936).

Too much attention has been paid to the treatment of chronic sinusitis, and far too little to its prevention. The literature has been full of new, and many times bizarre, operations and methods of curing this disease. Complete removal of all ethmoid cells and infected membrane of the various sinuses, is frequently desirable and attempted, but rarely accomplished; and if partially accomplished, at what a cost to the normal structures of the nose!

We have, perhaps, been so energetic in our efforts to kill the germ by completely destroying the tissue upon which it thrives, that we have lost sight of the etiologic factors which break down the natural defense mechanism and allow its initial entrance.

Only now are we beginning to realize that the majority of chronic sinus infections can be prevented by proper treatment of their etiologic factors.

We are beginning to have a conception that deficient and unbalanced diet, metabolic and endocrine disorders, allergy, failure to establish early and adequate aeration and drainage during attacks of the common cold, play an

important part in the development of this disease.

The foundation, and frequently the entire structure, of chronic sinus disease is built in infancy and childhood, and preventive treatment must therefore begin during the early years of life. Education of the parents, and greater care in the treatment of these seemingly unimportant disorders will prevent much distress and suffering in later life.

In the main the predisposing causes of chronic sinusitis can be placed in 4 general groups: Physiological effects, malformation of the structural framework of the nose, allergic tendencies, and infections.

By **physiological effects** we refer to unbalanced diet, glandular dystrophies, metabolic fluctuations, excessive use of alcohol and tobacco, swimming and diving, bad ventilation, lack of sunshine, and generally poor living conditions. The study of these various conditions comes in the field of general medicine, and their correction should be under the direction of the clinician. We, as specialists, must, however, be constantly on the alert and able to recognize certain of these deficiencies in order that we may refer them for general medical treatment.

Under **malformations** must be included hypertrophied tonsils and adenoids, deviated and malformed septa, enlarged turbinates, traumatic abnormalities, obstructing tumors and atresias. Were it possible to correct all nasal obstructions during early life, or even between the ages of 10 and 20, there would be few sinus operations necessary in later life, except, of course, those due to abscessed teeth or superimposed on allergic foundations. Surgical preventive measures must include the removal of obstructing and infected adenoids and tonsils, correction of septal spurs and deviations, removal of polypi, polypoid degenerations and hypertrophies which interfere with free ventilation and free drainage, and removal of abscessed teeth, foreign bodies and neoplasms.

Allergy is an important etiologic factor in chronic sinusitis. There is a definite reason for this seemingly great increase of allergic children, namely, the substitution of various formulae all using the cow, the goat, or the donkey instead of the mother for the source of food supply in infancy. Any child who re-

ceives from 6 to 8 overwhelming doses of foreign animal protein each 24 hours over a period of months or years, is likely to become sensitive to that protein, and then his lowered threshold is apt to render him more susceptible to other protein sensitizations.

There is little doubt, however, that allergy and sinus disease frequently **do** go hand in hand, and whenever this condition does exist any treatment of one without treating the other, will surely fail; and we must be particularly on guard against too active surgical treatment without the counsel of the allergist.

Infections are the main objective of this paper. Inflammation of the sinuses are practically all of bacterial origin; irritation caused by trauma without superimposed infection is transient.

In a series of 177 cases of sinus infections, the organisms most commonly found by Babcock were the pneumococcus, streptococcus, and the staphylococcus. These are usually secondary invaders and follow an exanthemata, influenza, or the common cold. The local treatment, given in detail later, is the same for all three.

It is with hesitation that I mention the common cold; it is, however, the most frequently given etiologic factor in chronic sinusitis and must, therefore, necessarily be included in discussion of this subject.

Every acute head infection is potentially a chronic sinus infection, and yet it is surprising how unconcerned many persons are regarding a persistent purulent nasal discharge—a little “catarrh” they call it—no more than the usual amount inevitably incident to the “local climate,” which “climate” may be from sea level to the highest mountain. We physicians have not sufficiently warned our patients of the evil consequences which may follow such carelessness, nor have we sufficiently emphasized contagion. It is common to find several members of one family showing, not only the same manifestations, but even the same organism on culture. The handkerchief and pocket are two of the greatest offenders in disseminating nasal infections.

The etiology of the common cold has not been definitely established. No age, race, color, or sex has a corner on this disease. Climate, in the absence of the infecting organism, has no definite affect, as is evidenced by the

fact that arctic explorers in intense cold are free from colds until their return to civilization.

There is evidence that colds are due to an invisible, unculturable, filterable, agent which is present only in the early stages of the disease. This view dates from Kruse's experiments in 1914; it has recently been confirmed by Dochez, Mills, and Kneeland, who were able to obtain 44% successful transmissions both in humans and apes.

Kerr and Lagan, on the other hand, were unable to infect students living in air-conditioned surroundings under ideal climatic conditions. They suggest that if a filterable virus is the cause, the environmental factors and the general body responses to them, must be considered in the preparation of the soil, and to a greater degree than heretofore.

While the etiology is most confusing, the symptoms are nearly always the same. The incubation period is from 1 to 4 days. The first general symptoms are a sense of chilliness, and even an actual chill, a decrease in the amount of perspiration, a dry feeling of the skin and mucous membrane of the nose and mouth, and excretion of increased amounts of urine. This first stage of the disease is followed immediately by the local manifestations of sneezing, rhinitis, congestion of the turbinates, obstruction to breathing, impairment of drainage, and frequently loss of the sense of smell. During this period there is **no increase in leucocytes** and **no fever**; two important points!

One to 3 days later purulent discharge appears and this normally continues for from 1 to 3 weeks, depending on, the virulence of the organism, the resistance of the patient and the spaciousness of the nasal cavity. If untreated the discharge may continue for the rest of the patient's life.

Pathology: “Fink” in 1927 took biopsies from the mucous membrane of individuals suffering from various stages of acute head colds and found the following interesting phenomena:

In the early stage, before the purulent discharge appeared, there was marked edema and increase of eosinophiles in the stroma, and in some cases a marked dilation of the cavernous sinus blood vessels in the turbinates; there were no polymorphonuclear neutrophilic

leucocytes, no dilation of the ordinary arteries and veins, no abnormal increase in the lymphoid cells or eosinophiles within the lumen of the arteries and veins, and no bacteria under the epithelium. Thus, in the early stages, none of the classical signs of bacterial infection were apparent in the nasal mucosa; the picture was typical of an acute allergic reaction. Fink, therefore, drew the conclusion that the early symptoms of the acute cold were the result of nerve reflex.

With the appearance of purulent discharge the feeling of congestion in the nose is as a rule relieved. At this time the polymorphonuclear neutrophilic leucocytes and dilated capillaries containing them appear close under the epithelium. There is less interstitial edema, and the eosinophiles diminish; there is also a marked increase in the lymphocytes, a general leucocytosis, and fever. This is the typical pathological picture of infection.

With the subsidence of the purulent discharge and the return of the mucosa to an average resting state, the polymorphonuclear leucocytes disappear completely and an occasional eosinophil reappears. "Fink" states that in a patient who has had repeated purulent colds there frequently results a permanent relative increase in plasma cells, large round cells, numerous forms of transitional plasma cells and connective tissue. Thus hyperplasia begins, and the foundation for the chronic infection is laid.

With the work of Fink, Kerr, and Dochez in mind I would like to present the following hypothesis:

Firstly, the common cold in its early stages at least is primarily a transient allergic manifestation.

Secondly, this allergy develops because of a filterable virus made active by the failure of the body to adjust itself to unfavorable climate and environment.

Thirdly, the purulent discharge follows the invasion of the tissues by a variety of bacteria superimposed on a vulnerable, allergically prepared mucous membrane. These bacteria may be present within the body itself—in the sinuses, tonsils, or adenoids—or they may be introduced from without.

Fourthly, most of the serious complications are due to the secondary, and not to the primary invaders.

The allergic theory is substantiated by the nasal congestion with watery discharge from the nose and eyes, the sneezing, lack of fever, the marked increase in eosinophiles in the stroma and secretion, no polymorphonuclear leucocytes, and no bacteria in the tissues.

The rationale of the treatment which we have used for the past several years is based upon the assumption that this theory is correct. I believe, and we have case histories of many patients which seem to substantiate this belief, that by early treatment the allergic state can not only be shortened, but that the purulent stage can many times be entirely prevented.

Treatment: The general management of a patient suffering with a cold should be with the internist or the pediatrician, but the local treatment certainly should be left to the rhinologist. Unfortunately the clinician rarely calls the rhinologist to see an acute head cold unless a well developed sinusitis is present, and by that time the infection has become general with nasopharyngitis, laryngitis, bronchitis, etc. Personally, I think that the early local treatment of the common head cold is just as important as the local treatment of Vincent's angina, prostatitis, or athlete's foot, and that the earlier the local treatment is instituted the shorter the attack, and the less severe the complications.

Following is an outline of the general plan of treatment we now use:

When the patient is seen early the usual advice as to elimination, room temperature, diet, etc., is given, with instructions to take every 3 hours a capsule containing $\frac{1}{4}$ grain ephedrine, $\frac{3}{8}$ grain luminal, and $\frac{1}{600}$ grain atropine.

Ephedrine internally has a definite action in reducing swelling of the congested nasal mucosa.

Luminal gives the patient a feeling of well being and tends to check unpleasant general nervous reactions from the ephedrine.

Atropine lessens excessive nasal secretions and stimulates the sympathetic nervous system, thus aiding in diminishing the nasal congestion.

Active local treatment is begun at the first sign of nasal congestion, and aims at the establishment and maintaining of free aeration

and free drainage. We attempt to accomplish these by depleting the congested nasal mucous membrane, by stimulating the vaso-constrictors with early return of the blood vessels to normal, and stimulating the cilia to removal of excess mucus.

Normally there is a protective blanket of mucus covering the ciliated epithelium, but when the mucus becomes too abundant the action of the cilia is choked, and the bacteria then grow under ideal conditions.

Regardless of the severity of the attack, and the age of the individual, the local treatment is as follows:

Thin strips of cotton saturated with a solution of 5% neosilvol and $\frac{1}{4}\%$ isotonic buffered solution of neosynephrin (buffered to an Hp. of 7.3) are gently packed into the nose with a bayonet forceps; the excess solution of the strips will run into the nasopharynx. The strips should fit snugly, but not tightly. The first strip is placed between the septum and the middle turbinate, as high up and as far back as possible. The second strip is placed between the inferior turbinate and the septum, extending well back and up into the middle meatus. When space in the nasal cavity permits, a third strip is placed low down on the floor of the nose in contact with the inferior turbinate throughout its entire length.

The strips are allowed to remain in place for about 10 minutes. The patient is then instructed to blow the nose gently; usually a copious amount of mucus is expelled. If the mucus cannot be blown out, the nasal cavity is sprayed with warm Ringer's Solution, which not only dislodges the mucus, but seems to have a tonic effect upon the nasal mucosa. Examination of the nasal cavity then shows the mucous membrane greatly depleted with space for drainage and breathing.

According to Tainter neosynephrin is by far the best shrinking agent for the nasal mucosa, being about 12 times as effective as ephedrine in producing ischemia, and the duration of its action is from 3 to 4 times as long. Our results verify his.

The mixture of neosilvol and neosynephrin is hygroscopic when in contact with the nasal mucosa, and has the following advantages: Excess water is actually removed from the tissues; the vasoconstriction is marked and

long sustained, thus lessening absorption of toxins, tending to prevent pressure headaches; free ventilation and drainage is prolonged, from 8 to 12 hours; the mixture is non-irritating in most cases, causes no burning nor stinging sensation, and can be used over a long period of time without losing its effectiveness; and there is no general reaction to the combined drugs; occasionally a sensitive individual may develop rather severe local vasodilation and hay fever symptoms after the pack.

Children, even as young as 4 years, can easily be treated by this method if patience and gentleness are used. After the first 2 to 3 treatments most children cooperate readily and frequently become better patients than their parents. Younger children must be held since the treatment is not pleasant because of a tickling sensation.

The ideal treatment is twice a day for the first few days, then once a day as the symptoms subside, and finally the interval between treatments is lengthened depending on the clinical appearance of the membrane and cessation of symptoms. The treatment is of value even after the purulent stage is well advanced because it facilitates drainage and relieves the nasal congestion. Let me emphasize that the earlier the treatment is begun, the shorter and milder the attack.

Home treatment consists of a spray containing $\frac{1}{4}\%$ isotonic neosynephrin buffered to 7.3 Hp used as frequently as necessary to maintain adequate nasal respiration.

Summary

Much can be accomplished in the prevention of chronic sinusitis by early treatment of its etiological factors.

This includes:

1. The correction of abnormalities.
2. The surgical correction of nasal malformations and obstructions to insure adequate breathing and drainage space.
3. Treatment of the allergic individual.
4. Establishing and maintaining free aeration and drainage by early treatment of the common cold with nasal packs saturated with a mixture of colloidal silver and isotonic neosynephrin.

The hypothesis is presented that all colds

in their primary stage are allergic manifestation, that the allergy develops because of a filterable virus made active by the failure of the body to accommodate itself to unfavorable climatic and environmental changes, that the purulent stage is due entirely to secondary invaders, and that any serious complications are due to these secondary invaders.

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ORVILLE HARRY BROWN: I congratulate Dr. Ashley on his splendid presentation. I agree with his conceptions. I am not a rhinologist, however—only an internist. (see the further remarks elaborated into a short paper following the next discussion.

DR. H. T. BAILEY: Dr. Ashley has shown you how a cold is the fore-runner of sinusitis, and that a nervous reflex causes a turgescence in the nose and throat. He and all of us admit that we are not certain what causes a cold.

My talk may sound more like the talk of a gastro-enterologist than an ear, nose and throat man. A few years ago our county society of Phoenix had a symposium on colds and this was our conclusion: Suppose, for example, a person starts from Phoenix to, say New York City or any place where he would be on a train for 3 to 4 days. The 1st day out he eats heartily at meals and between meals and takes no exercise; the 2nd day he does the same; the 3rd day he eats not quite so much but now has the entire alimentary tract loaded with undigested food. This food undergoes decomposition and forms by-products and toxins which the system absorbs. This develops a sluggish system for the patient and an engorged liver. He feels badly, is apathetic and perhaps has a headache. These toxins and by-products react on the mucus membrane of the nose, then as soon as the surface of the body is chilled, the mucus membrane of the nose reacts, is congested, and excretes mucus. This congestion and excretion of mucus in the nose acts as a culture tube for bacteria which may be present in the nose at that time. These bacteria develop toxins which are absorbed into the circulation, carried to the liver which is already engorged and sluggish on account of the undigested foods and toxins. The kidneys also are congested and can not eliminate freely. Thus the toxins and the impurities come back to the nose and the upper air passages. So around and around she goes and down and up, and comes out right here (pointing to the nose).

BACTERIAL AND ALLERGIC FACTORS IN COMMON COLDS

ORVILLE HARRY BROWN

Phoenix, Ariz.

(A discussion, slightly elaborated, of Dr. Ashley's paper).

Living organisms play a predominant part in colds. The germs may succeed in their attacks because they have high virulence, having been passed rapidly through many individuals—an epidemic type of organisms as swept the world in 1918-1919 and as the epidemoid type which prevails most of the time in densely populated areas.

The epidemic organisms are developed easily when large numbers of men are intimately grouped as occurred in the war camps. A boy arrived at a camp with a severe cold. His germs were soon deposited in the dish water, on door knobs, pens, pencils and coughed numerous into the atmosphere. Virgin susceptible soil was promptly found. The germs were soon distributed again, and again, many, many times with 20,000 to 60,000 men intimately associated in one post.

It is a law of bacteriology that when an organism is passed in rapid succession through a series of animals its virulence is stepped-up in proportion to the number of animal passed through and the speed with which it is transferred from one to the next.

If this theory of the influenza epidemic is correct there is not an influenza organism but influenza organisms. There have been many investigations and reports as to the influenza germ; one found a streptococcus, another a diplobacillus, a pneumococcus, an influenza bacillus, a filterable virus and even an entirely new organism. It seems to me that is exactly what was to be expected.

Epidemoid organisms simply have not had the opportunity to be greatly stepped-up in virulence. When they find virgin (poor immunity) or fertile soil their attack is vicious, but not equal to that of the epidemic bacteria.

Another of my ideas is that a person may have colds, even frequently—from his own organisms. These usually will need help in getting started.

Any organisms, the epidemic, the epidemoid

or the personal type are helped by allergic changes in the sites where the colds start. The nose is the usual shock organ.

The food, having been consumed in too great a quantity, or being excessively allergenic because of being decomposed from various causes as I have recently reported, or because the person is unduly sensitive to the pre-amino-acid stages of the food, causes an allergic reaction in the nose. Thus is prepared fertile soil in the nose for the growth of any type of bacteria.

Another idea of the causes of the allergic reactions, one which should especially interest the nose and throat specialists—is that retained bacterial products, and the mucous secretions in ethmoid or sphenoid cells or antrum decompose, become highly allergenic and under excessive pressure are forced into the nasal cavity and there set up a marked allergic edema. This edematous poorly nourished tissue makes a fertile soil for the growth of bacteria. The more virulent they are, the more they grow.

The lesson from this theory is that physicians generally should educate patients to continue with their nose and throat or allergic treatments or both as long as there are indications of nasal catarrh.

Nose and throat specialists tend to be either too radical or too conservative. If an antrum infection does not clear up with a dozen washings that does not mean that a window needs to be made at once but rather that more washings must be done—if need be for a year or more.

We all need to recognize the tremendous part that chemical disease—allergy—plays in colds and see that patients highly susceptible to them have the advantages of allergic studies and treatment.

I believe that an intensive research should be carried on for the susceptibility of the various organisms to various antiseptics; when a certain bacterium is found in an antrum for example that antiseptic to which that organism is most susceptible may at least be tried against it, providing of course that the solution is not too irritating to the mucosa.

To illustrate what I mean: I^{2 3 4} have found that pneumococci are universally susceptible to quinine and easily killed by even highly di-

lute solutions both in the test tube and the patient. In other words quinine, I maintain, is a specific against pneumococcic pneumonia. It has no destructive effect on the many other types of bacteria with which I worked.

I repeat that it may be possible to find an antiseptic specific against each of the catarrhal organisms. A cold then would first have to be studied bacteriologically and the right antiseptic selected for its local treatment.

Colds are serious and need intensive study by rhinolaryngologists, laboratory workers, pathologists and allergists.

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RESOLUTION ON INSURANCE MEDICAL DIRECTORIES.

Adopted by the Arkansas Medical Society April 29th, 1936. Presented to the House of Delegates of the American Medical Association May 11th; approved by the Judicial Council May 14th and adopted by the House of Delegates of the American Medical Association May 14th, 1936.

WHEREAS, certain commercial interests are publishing medical directories, listing physicians by specialty and otherwise, as available for insurance and compensation work, and other professional services, and

WHEREAS, participation by listing in these lay publications merely serves for the profit of the promoters, and is furthermore technically indirect solicitation of patients,

THEREFORE BE IT RESOLVED, That the Arkansas Medical Society condemns these practices as unethical and forbids its members to continue listing their names in such directories, and

BE IT FURTHER RESOLVED, That the Arkansas Medical Society requests the House of Delegates of the American Medical Association to take similar action."

ANTIVENIN

Concurrent with the reports of more than 600 persons being bitten by the "Black Widow Spider" with a mortality record of 40, comes the announcement that E. R. Squibb & Sons are now supplying Antivenin (Anti-Black Widow Spider Serum). Widespread professional interest has been shown in methods of treating these bites, especially with the steady increase in the number of cases reported from southern, southwestern and western sections of the United States.

Antivenin is prepared by the hyperimmunization of sheep with repeated doses of venom from the black widow spider. The serum is standardized by determining its neutralizing effect when mixtures of it with venom are injected into young rats. Clinical reports upon this important product as well as information as to dosage and administration are contained in literature supplied by E. R. Squibb & Sons upon request.

Antivenin is available in ampuls of sufficient content to permit the withdrawal and administration of 10 cc. of the serum.

MEDICAL ANNALS OF ARIZONA

HEALTH AMONG THE NAVAJOS

SIDNEY J. TILLIM

(Continued from August issue)

Despite the best efforts of the physician, there will yet be opposition from medicine men, either for fear of losing their social hold over their people or of losing revenue. In their efforts to combat the invader they spread all sorts of lies. One instance is a young man who had suffered from tuberculosis of the skin for several years, without consulting a physician. I learned of his illness through an Indian from that district and went to see him without invitation. It was far from the hospital; physicians had seldom gone there. The family would not, at first, allow the patient to be seen. They would have nothing to do with the hospital or the white doctor. Medicine men had told them that in the hospital they cut off arms and legs, and often they murder Indians. After establishing that we were bent on a mission of mercy and that we actually had done good for Indians they knew, including medicine men, they allowed an examination of the patient. He was a pitiful sight; extreme emaciation, multiple ulcers and sinuses, and crippling to such an extent that his only means of locomotion was shuffling along on his buttocks. He was taken to the hospital and kept for several months, when the family insisted they must try one more "sing." The patient walked out of the hospital on crutches.

Once a medicine man called late at night, saying: "Doctor, I want to bring my children to the hospital tonight. I am afraid. They are sick and too many babies dying outside. Navajo medicine men don't do no good." It is quite certain this man never recommended such a procedure for others. In fact, a month later he objected strenuously to a physician's request to address a meeting, saying: "We don't need the doctor to talk to us here. We can talk to him in the hospital. We know where to find him. He don't have to talk here."

The real harm caused by these men comes from the perpetuation of superstitions and

failure to recognize the limits of their usefulness as healers. Like the majority of non-medical healers in white communities, they are not diagnosticians. They do not speak of disease entities; they prescribe in terms of symptoms—headache, cough, fever, blindness, insomnia, bad dreams, etc. It is true that they have concoctions for the relief of many symptoms; these include cathartics, diuretics, antispasmodics, oxytocics, diaphoretics, and hypnotics. Often one finds several pots of simmering brew intended to combat different symptoms; for example, in an obstetrical case there may be one to prevent fever, one to check bleeding, and others. It is my conviction that they are to blame for much crippling and many deaths which could be averted by proper medical care. Time and again they call for physicians when the patients are about to die; the reason for calling a doctor at the last moment is to have an opportunity to shift the blame, or to gain the help of the agency or the local missionary for the burial. It is a considerable inconvenience for a Navajo to participate in a burial; he must isolate himself in his hogan for four days, followed by a cleansing bath, before he may again enter the family circle. Sometimes the patient is taken to the hospital so that he may die there, and thus save burning his hogan, as is the custom after a death. The Indian, contrary to popular views, does not extend his stoicism to dying. There is just as much crying and mourning for a deceased relation as among any white people. Except for the ultra-fanatic, they are not prejudiced against seeking the services of a white doctor if they have seen encouraging results from him in other cases. The chief opponents to the spread of modern medicine in the Navajo country are the medicine men; their practice brings them easy money and prestige. They know the minds of their people, and they fight the growing popularity of a new man; yet, once a physician gains a reputation his popularity grows. Indians are known to have followed physicians from one jurisdiction to another for services.

(Continued in October issue)

SOUTHWESTERN MEDICINE

Printed by THE A. C. TAYLOR PRINTING CO., Phoenix, Arizona
Published monthly for the Board of Managers of the four constituent societies.

VOL. XX.

SEPTEMBER, 1936

No. 9

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OUR "FALL" MEETING

The clinical conference of the Southwestern Medical Association, announcement of which is in another column of this issue, is the only medical meeting other than those of the county societies to be held in our territory until next spring.

This is an intensive three-day post-graduate course which should interest every physician within a day's drive of El Paso during those days in November.

Every speaker is a prominent teacher. Much of the stuff they will "hand out" will be old to many if not to all of us, but the mere fact that one finds himself in agreement with great teachers is a compliment to stir one's ego and self assurance and should send him back to his home with a determination to make his public appreciate him all the more. It will be good for that inferiority complex.

Then too! There is the chance that the teachers may bring us something a bit new!

It is probably safe to say that it is a foregone conclusion that any physician, we care not where he come from cannot sit for three days listening to outstanding teachers without picking up a few helpful points.

Then too! You are not forbidden to visit and "talk shop" with your confreres! They'll give you ideas—some of them certain to be helpful.

We challenge any "doubting Thomas" of our physicians as to the value of this meeting to be a sport and make one experiment. Attend this meeting. Make an honest effort to absorb as much information as possible. Make notes on it in a neat permanent manner in a neat appearing book obtained for the purpose. When

you get home review the material so as to keep it fresh in your mind. Make use of it when opportunity offers. When the time for the 1937 meeting arrives, figure up the cost of attending this meeting, loss of time and all; then do a little figuring in your head and see if you didn't make at least a good rate of interest on your investment.

Then too! Think of the new friends, the more satisfied patients and your own greater satisfaction in your improved work as a result of attending the conference!

Can you afford to stay away?

PREPARATION OF MOTHERS' MILK

On July 24th of this year the Mothers' Milk Bureau of the Children's Welfare Federation of New York City announced the adoption of a new process of quickly freezing mothers' milk so as to preserve it.

The patent for the process is owned by the Borden Company and was turned over to the Children's Welfare Federation by James A. Tobey, director of the Health Service of the company. The inventor of the process is Washington Platt, a scientist in Syracuse, N. Y. He says the milk is frozen under conditions so that upon thawing the natural emulsion will remain substantially unbroken and the other characteristics will remain sufficiently unchanged so that the thawed product will be suitable for infant feeding. The milk is put into small molds and covered. Dry ice is used to quickly freeze the milk into wafers which are then put in sterile bottles and stored at a low temperature.

Dr. Walter H. Eddy of Teachers College, Columbia University, showed that frozen human milk as compared with the unfrozen milk

has lost none of its vitamins. Moreover, frozen human milk does not differ from fresh milk in total solids, fats, carbohydrates or proteins.

Sir Henry Wellcome, one of the founders of the Burroughs-Wellcome Co., died in London on July 5, 1936, in his 83rd year.

Mr. Wellcome was American born and an intimate of Dr. William Worrall Mayo, father of the famous Mayo Brothers. It was Dr. Mayo who encouraged Mr. Wellcome to study pharmacy.

He was born in a log cabin near Almond, Wisconsin, about 125 miles from Milwaukee, the son of an itinerant missionary, the Rev. S. C. Wellcome, who travelled in a covered wagon in Wisconsin and Minnesota preaching to the Indians.

Henry Wellcome started as a pharmacist in Rochester, Minn. in 1868, graduating from the Philadelphia College of Pharmacy in 1874. He was sent to London as a representative of an American drug firm and in 1880, with the late Silas M. Burroughs established the firm of Burroughs-Wellcome and Co.

Mr. Wellcome's field of interest was large. He was a member or an honorary fellow of 22 organizations anthropologic, zoologic, archaeologic, geographic, pharmaceutic, medic, etc. His organization was responsible for a large number of important original researches.

He became a British subject during the World War. He was knighted by the late King George the Fifth in 1932.

The **American Board of Obstetrics and Gynecology** will hold its next written examination and review of case histories of group B applicants in various cities in the United States and Canada on Saturday, November 7, 1936. Application blanks and booklets of information may be obtained from Dr. Paul Titus, secretary, 1015 Highland Bldg., Pittsburgh, Pa. Applications for this examination must be filed in the secretary's office 60 days prior to the scheduled examination.

Dr. C. G. Salsbury, medical director of the Sage Memorial Hospital of Ganada, Ariz., has arranged a **Harlow Brooks Memorial Javajo Clinical Conference** which is to become a

yearly affair. It opened August 31-Sept. 1. A glimpse at the program indicates that it was a splendid two-day postgraduate course. Among the speakers were: Milo K. Tedstrom, Santa Ana, Calif., Percy T. Magan, W. W. Peter, Ariz., and Malcolm R. Hill of Los Angeles.

TO ALL PHYSICIANS OF THE SOUTHWEST

The program committee has obtained eminent men to conduct our next annual clinical conference. The program will be interesting and instructive and one none of us can afford to miss. See the list of speakers.

The meeting will be held in El Paso, Nov. 19, 20 & 21. Now is the time to make your plans to be there.

The program committee, is necessarily limited in its endeavors by the size of our membership, hence the greater the number of paid up members we have the more funds to reach out with and bring in the leading men of the country to conduct our conferences. With the support of every physician in the Southwest, we can make our annual clinical conference one of the best in the country.

It is impossible for the chairman and members of the membership committees to contact every one and we earnestly solicit the assistance of all to enlarge our membership. If you were not present at our last conference, ask some one who was there about it. All those who did attend last year, kindly tell every one you see the type and value of the meetings we are having.

The annual dues are only \$3.00. The Board of Governors have ruled that all non-members registering at the meeting will be charged an extra \$3.00.

For your convenience the following is a list of the chairman of the membership committees in each section.

Arizona—Dr. Howell Randolph, Professional Bldg., Phoenix.

El Paso and Western Texas — Dr. B. F. Stephens, Martin Bldg., El Paso, Texas.

New Mexico—Dr. Wm. H. Woolston, 1st Nat. Bank Bldg., Albuquerque, and

Northern Mexico—Dr. Frank T. Hegeland, Cananea, Sonora, Mexico.

They will all be glad to accept your applica-

tion. Make your plans now to attend this clinical conference for it is one investment which will pay you good dividends.

C. R. SWACKHAMER, M. D.

Chairman, Membership Committee.

The officers of this association have promised a bigger and better program for the 1936 meeting and the program committee has certainly fulfilled this promise as evidenced by the tentative draft released below. Dr. Rheinheimer and his associates have prepared for our regular November session in El Paso, a program that can in every way qualify as a post graduate short course.

We have a greater number of speakers, a wider geographical distribution of them, a representation of different teaching institutions than we have had at other sessions and the addition of speakers in three specialties that we have not previously had, namely obstetrics and gynecology, x-ray and clinical laboratory.

The program committee has kept constantly before it, the subject matter of the previous 3 sessions and have insisted that the subject matter chosen for this Fall's discourses be not a repetition of any program of the past 3 years.

A comparison of our program with those of the clinical conferences of Oklahoma City, Dallas, Houston and San Antonio, makes us extremely proud to submit this program to our membership, realizing that there will be nothing better west of the Mississippi for Fall sessions than that prepared by our program committee.

We extend hearty congratulations to our program committee: E. W. Rheinheimer, chairman; Meade Clyne, Tucson; E. J. Cummins, El Paso; Fred B. Evans, Alamogordo; F. T. Hogeland, Cananea; John L. Lamone, Jr., Albuquerque; Howell Randolph, Phoenix; Stephen A. Schuster, El Paso.

The Speakers

Dr. Harold Brunn, San Francisco: General and Chest Surgery; Professor of Surgery, University of California Medical School; Member of American Surgical Association, Western Surgical Association, Pacific Coast Surgical Association, American College of Surgeons, and American Association for Thoracic Surgery.

Dr. Thomas E. Carmody, Denver: Otolaryngology-Rhinology; Past President of the American Laryngological, Rhinological and Otolological Society; Member of, American Academy of Ophthalmology and Oto-Laryngology, American Laryngology Association, American Otolological Society, American College of Surgeons, American Board of Otolaryngology certificates, and Bronchoscopic Society.

Dr. Ralph A. Kinsella, St. Louis: Internal Medicine, St. Louis University; Member of Central Society for Clinical Research; Association of American Physicians; American College of Physicians, and American Society of Clinical Investigation.

Dr. James T. Case, Chicago: Radiology; Professor, Northwestern University Medical School; Member of Western Surgical Association; American College of Surgeons; American Gastro-enterological Association; Radiological Society of North America; American College of Radiology and American Radium Society.

Dr. Warren T. Vaughan, Richmond, Va.: Internal Medicine; Editor of Journal of Laboratory & Clinical Medicine; Member of American Society of Clinical Pathologists.

Dr. N. F. Ockerblad, Kansas City, Mo.: Urology; Associate Clinical Professor, University of Kansas; Member of American Urological Association and American College of Surgeons.

Dr. Willard R. Cooke, Galveston: Professor of Obstetrics and Gynecology, University of Texas; Member of, American Association of Obstetrics, Gynecology and Abdominal Surgery, Board of Obstetrics and Gynecology and Central Association of Obstetrics and Gynecology, and Fellow of American College of Surgeons.

Dr. Isidore Cohn, Professor of Clinical Surgery, Tulane University; Member of, American College of Surgeons, Southern Surgical Association.

The Rocky Mountain Tuberculosis Conference is scheduled for Albuquerque, N. M., September 28-29 of this year. The program is complete and will be found in another section of this issue.

Several of our men are especially interested in this conference. Among those concerned with the program are Drs. Chas. W. Mills, Tucson, Felix P. Miller, El Paso, T. C. McCamant, El Paso, J. R. Earp, Santa Fe, R. L. Homan, Jr., El Paso, Robert O. Brown, Santa Fe, LeRoy S. Peters, Albuquerque, J. W. Flinn, Prescott, Sam H. Watson, Tucson, and Walter I. Werner, Albuquerque.

Pasteurization of milk in Phoenix, Arizona, is now compulsory by city ordinance. All of the dairies are complying with the requirements or will be ready to supply pasteurized milk at the date the ordinance goes into effect. This is a step forward and we believe that there are several members of the Maricopa County Medical Society who deserve special commendation for their work in behalf of this ordinance. Among those who should be mentioned are: Drs. Fred Holmes, promotor of the ordinance, F. J. Milloy, member of the city board of health, and R. W. Hussong, city health officer.



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ROCKY MOUNTAIN TUBERCULOSIS CONFERENCE

Franciscan Hotel
Albuquerque, New Mexico
September 28, 29, 1936.

Monday

Medical Section

Dr. Charles W. Mills, presiding

9:00 A. M.—12:00

Surgical Collapse of the Lung:

R. J. Friel, M. D., Salt Lake City, Utah.

Value of Phrenic Nerve Interruption as the
Sole Procedure in Pulmonary Tuberculosis:

J. M. Odell, M. D., Sup't, Eastern Oregon

State Tuberculosis Hospital.

Some Phase of Thoracoplasty:

C. F. Sough, M. D., Colorado Springs, Colo.

When Should Artificial Pneumothorax Treat-
ment Be Discontinued?

Munford Smith, M. D., Howard W. Bos-
worth, M. D., Barlow Sanatorium, Los An-
geles, California.

Anesthesia to the Tuberculous:

Arthur E. Guedel, M. D., Professor of Anes-
thesiology, University of Southern California.

Sociological Section

10:00 A. M.—12:00

Finding the Case of Tuberculosis:

L. A. Dewey, M. D., Epidemiologist for New
Mexico Bureau of Public Health.

What Comes After Case-Finding—From the
Public Health Nurse:

Ada Taylor Graham, Ex-secretary of the
Utah Tuberculosis Association.

From the Work Agency:

Agnes Donaldson, Family Welfare Society,
Colorado Springs, Colorado.

From the County Physician:

T. C. McCamant, M. D., County Health Of-
ficer, El Paso, Texas.

From the Cripple Children Program:

Marie Wickert, Assistant Director, Division
of Cripple Children, Colorado State Depart-
ment of Health.

Joint Luncheon

12:00-2:00 P. M.

Significance of Tuberculosis in Childhood:

J. A. Myers, M. D., Dep't of Preventative
Medicine and Public Health, University of
Minnesota.

Joint Session, Sociological and Medical

Rosslyn Earp, M. D., presiding, Director of
Public Health, State of New Mexico.

2:00-5:00 P. M.

Trends in the Care for the Indigent Sick by
Public Agencies

In New Mexico: Mr. Fay Guthrie, Director
of Security and Public Assistance.

In Colorado: Robert Cleere, M. D., Director
Department of Public Health.

In Arizona: Miss Florence Warner, Direc-
tor of Department of Public Welfare.

Summary: Robert Brown, M. D., President,
New Mexico Tuberculosis Association.

Socialized Medicine as It Affects the Private
Sanatoria:

R. B. Homan, Jr., M. D., The Homan Sana-
torium, El Paso, Texas.

Tuesday

Medical Section

Dr Charles W Mills, presiding

9:00 A. M.—12:00

Tuberculosis in the Aged:

John W. Shurman, M. D., Associate Pro-
fessor of Medicine, College of Medical Evan-
gelists, Los Angeles, California.

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Laryngoscope, 1935, XLV, 149-154

N. Y. State Jour. Med., 1935, 35, No. 11, 590

Arch. Otolaryngology, Mar. 1936, Vol. 23, No. 3, 306-309

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Does Tuberculin Deserve a Place in the Therapy of Tuberculosis? Thirty Years in Retrospect:

Max Rothchild, M. D., and Harry C. Warren, M. D., The California Sanatorium for the Treatment of Tuberculosis, Belmont, California.

Discussion by Sam'l H. Watson, M. D., Tucson, Arizona.

The Virulence of Tubercle Bacilli:

H. J. Corper, M. D., Research Department, National Jewish Hospital, Denver, Colorado.

Emphysema Complicating Pneumothorax Therapy in Pulmonary Tuberculosis:

Capt. Frank L. Leever.

Discussion by Maj. George F. Aycock, Fitzsimmons General Hospital, Denver, Colorado.

Management of Oleothorax Therapy in the Treatment of Pulmonary Tuberculosis:

Leslie P. Anderson, M. D., Oakhurst Sanatorium, Elma, Washington.

Sociological Section

Mrs. Francis C. Wilson, Secretary, presiding
Tuberculosis Association of New Mexico.

10:00 A. M.—12:00

Educating the Public About Tuberculosis—

Through the Christmas Seal Sale:

Mrs. Bruce Parker, President, Weld County Public Health Association, Greeley, Colo.

Through Schools:

Mrs. Grace Corrigan, State Rural School Supervisor of New Mexico.

Through Local Organizations:

Ruth Connely, Executive Secretary, Tuberculosis Association of New Mexico.

Through Publicity:

Rabbi A. Lincoln Krahn, Albuquerque, N. M.

Joint Luncheon

LeRoy S. Peters, M. D., presiding
Albuquerque, New Mexico.

12:00—2:00 P. M.

Distribution of Tuberculosis Mortality in Western United States:

C. C. Dauer, M. D., Department of Preventive Medicine, Tulane University of Louisiana.

Joint Session, Sociological and Medical Sections

LeRoy S. Peters, M. D., presiding.

2:00—5:00 P. M.

Comparison of Visible Light, Ultraviolet Light, and Other Climatic Factors on the Mortality of Tuberculosis:

C. H. Boissevain, M. D., Colorado Foundation for Research in Tuberculosis.

The Physiological Action of Climate and Its Application in the Treatment of Tuberculosis:

John W. Flinn, M. D., and John S. Flinn, B. Sc., Prescott, Arizona.

Discussion by Sam'l H. Watson, M. D., Tucson, Arizona.

Diagnosis of Tuberculosis in Private Practice:

Julius O. Arnson, M. D., The Tucson Clinic Tucson, Arizona.

Diagnosis of Tuberculosis in Private Practice:

Julius O. Arnson, M. D., Bismarck, North Dakota.

Tuberculosis in the Child—Its Relation to Tuberculosis in the Adult:

Charles V Berley, M. D., The Tucson Clinic, Tucson, Arizona.

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Tuberculosis Survey of High Schools and Higher Educational Institutions in New Mexico:

Dr. Walter I. Werner, Albuquerque., New Mexico.

Discussion: Dr. LeRoy Peters, Albuquerque, New Mexico.

NEWS ITEMS

Dr. Frank J. Milloy of Phoenix, vacationed in California during the month of August.

Dr. Howell Randolph spent part of July and August in Colorado, mostly in and about Estes Park.

Dr. B. B. Moeur, Governor of Arizona, was busy campaigning for re-election.

Dr. A. M. Tuthill, major general of the National Guard and adjutant general of the State of Arizona, has had over 23 years service as an Arizona National Guard officer. He seems completely recovered from a recent appendicitis operation and is back at his work.

Dr. C. M. Crone of Miami, Ariz., staff surgeon in the Miami Inspiration Hospital, with Mrs. Crone had a vacation trip to Mexico City. They were there during the time of the elevator operators' strike and as they occupied a room on the sixth floor of a hotel they were very much annoyed.

Dr. G. F. Manning, director of the Gila County Health Unit, has been active examining pre-school children during the past month.

Dr. J. D. Hamer, president of the Arizona State Medical Association, has been appointed by the Phoenix City Commission as a member of a committee to select an accredited expert to carry out the contemplated Phoenix public health survey. This is to be done in conjunction with the state.

Dr. and Mrs. W. P. Sherrill of Phoenix have completed a new home on 28th street, just north of Indian School road. The doctor will have plenty to do as he has ten acres surrounding his home.

Dr. E. A. Gatterdam of the Phoenix Clinic Phoenix, was called to LaCrosse, Wisconsin, on account of the death of his father which occurred unexpectedly. He returned home September 4th.

Dr. Trevor G. Browne of the Phoenix Clinic vacationed at the Foxboro Ranch near Flagstaff during August.

Dr. and Mrs. E. L. Hicks of Phoenix spent a short vacation in the White Mountains in the Greer district, where Dr. Hicks was convalescing from a recent automobile accident.

Dr. and Mrs. Nelson D. Brayton have been living in their summer cabin in the Pinals and entertained at frequent intervals during the summer.

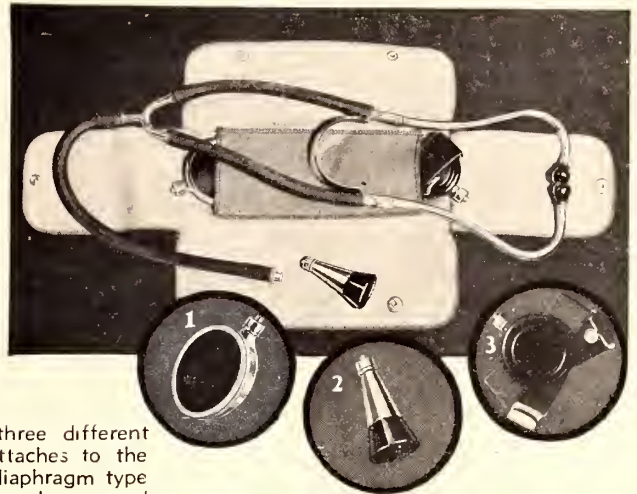
The Eighth Annual training course for Medical Department Reservists of the Army and Navy is to be held at the Mayo Foundation, Rochester, Minnesota, from October 4 to 17, 1936. The course has been so popular during the past 7 years that it is now necessary to limit the enrollment to 200.

The morning hours of the 2 weeks will be devoted to professional work in special clinics and study groups. Officers in attendance may select the courses they wish. The afternoons and evenings will be devoted to a medico-military program. This training is on inactive duty status and is without expense to the government. Enrollment is open to all Army and Navy reservists of the medical departments in good standing. Applications should be submitted to the Surgeon of the Seventh Corps Area, Omaha, Nebraska or the

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Binaural unit	\$2.00
Ford type bell chest piece	.75
Bakelite chest piece (with or without bracelet)	.75
Metal chest piece (large size)	1.25
Suede cloth pouch	.50

TOTAL \$5.25

PRICE of entire outfit purchased in one unit \$4.75

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Surgeon, Ninth Naval District, Great Lakes, Ill. The Surgeons General of the Army, Navy, and Public Health Service will probably be in attendance at least a portion of the time.

Dr. Joseph M. Greer flew to Ganado and attended the Harlow Brooks Memorial Clinical Conference. He reports that there was an excellent program and that there were 25 to 30 physicians in attendance. The thought is offered that probably in the future many Arizona and New Mexico physicians will plan a short summer vacation at the time of this conference.

Dr. Clarence E. Yount of Prescott attended the Clinical conference at Ganado during August.

Dr. Gerhard Kaemerling, who has been a frequent visitor to Phoenix and who has resided at 2032 North Alvarado road, was found dead in his hotel room in San Diego where he was spending the summer. He died apparently from a heart attack; it is reported that he had had heart trouble for a long time.

Dr. Aaron Berger has been camp physician to the C.C.C. camp, which has been stationed in the Grand Canyon. He recently had to take care of several boys who were caught in a slide and suffered numerous cuts and bruises; good recoveries were made.

Dr. Frederick P. Perkins of Tucson, major in the medical department of the Arizona National Guard, was encamped at Fort Alexander M. Tut-hill, near Flagstaff in August.

Dr. Fred G. Holmes has been named a member of the committee to make a health survey of the city and state.

Dr. and Mrs. K. M. Gilbert of Chandler, Ariz., recently returned from a vacation spent in Long Beach and San Diego.

Dr. George C. Truman, superintendent of Public Health for Arizona, addressed the Lions Club of Mesa early in August.

Dr. James M. Meason and his associate, Dr. Lawrence Von Pohle of Chandler, are having constructed a modern office building of 11 rooms.

Dr. James R. Moore, superintendent of the state hospital near Phoenix, addressed the Chandler Rotary Club upon the subject of the Arizona State Hospital. He especially stressed the great need of additional equipment and facilities for caring for the patients.

Dr. E. Payne Palmer of Phoenix left early in September for a trip to Europe where he is to address the Second International Congress of Scientific and Social Campaign Against Cancer.

Dr. J. Rosslyn Earp of Santa Fe, N. M., was elected vice-president of the western branch of the American Public Health Association which was held the latter part of June at Salt Lake City, Utah. The western branch of the American Public Health association selected Phoenix for its 1937 convention city.

Dr. J. S. Gonzales of Nogales, Ariz., addressed the Lions Club at one of its weekly luncheons during June.

Dr. Alvin Kirmse, Tucson, captain in the Arizona National Guard Medical Department has been in encampment in Fort A. M. Tut-hill during August.

Dr. James E. Redden of Casa Grande, captain in the Arizona National Guard Medical Department has been in encampment in Fort A. M. Tut-hill during August.

Dr. Guy French has been ill in the St. Joseph Hospital for the past few weeks.

Dr. Floyd Sharp has been ill since the first

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March 29, to May 8, 1937.

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Tropical Medicine and Parasitology, beginning June 14, ending July 24, 1937.

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of August in the Good Samaritan Hospital. He is at home now and doing nicely.

Dr. A. E. Cruthirds of Phoenix took a clinical course in ophthalmology and oto-laryngology at Denver, Colorado, July 27-August 7, 1936.

Dr. Kimball Bannister of Phoenix, played tournament golf in California during his vacation there.

Dr. Mayo Robb took his family over to San Diego and had a weeks vacation with them.

Dr. Henry T. Franklin and family toured Yellowstone, Zion and other National Parks, and reported an enjoyable trip.

Dr. H. L. Brehmer of Albuquerque, vacationed in California during August.

Dr. W. H. Woolston of Albuquerque, spent a part of his summer on the Pacific coast.

Dr. P. G. Cornish and his family of Albuquerque, visited Nova Scotia during the summer.

Dr. L. S. Peters of Albuquerque, took time off this summer to rest up along the Pacific coast.

Dr. L. B. Cohenour forsook his daily grind for several weeks and explored California.

Dr. J. W. Hannett and family of Albuquerque visited in New York City during the hot months.

Dr. E. E. Royner of Albuquerque, spent his vacation in California.

Dr. L. F. Elliott of Albuquerque spent several weeks in California during the hot months.

Dr. George Thorngate, Phoenix, was in Wisconsin with his family during August.

The editor has had among the papers for publication in Southwestern Medicine, one entitled "Etiology and Treatment of Chronic Arthritis." It has no name. Will the author please come forward and leave his name?

The 21st International Assembly of the Interstate Post-graduate Medical Association of North America, meets under the presidency of Dr. David Riesman of Philadelphia, October 12-16 with pre-assembly clinics on Saturday, October 10 and post-assembly clinics Saturday, October 17 in the hospitals of St. Paul.

The aim of the program committee, Dr. George Crile, chairman, is to provide for the medical profession of North America an intensive postgraduate course covering the various branches of medical science. The program has been carefully arranged to meet the demands of the general practitioner, as well as of the specialist. Extreme care has been given in the selection of the contributors and the subjects of their contributions.

A hearty invitation is extended to all members of the profession in good standing in their state provincial societies to be present to enjoy the hospitality of the medical profession of St. Paul, and the excellent program. A registration fee of \$5.00 will admit each member in good standing to all the scientific and clinical sessions.

A list of the distinguished teachers and clinicians who will take part on the program may be found on page 334.

Among these names we delight in mentioning: Drs. Russell L. Haden, who will speak on rheumatoid arthritis; Emil Novak on relation of the endocrine glands to sterility; Loyal Davis on neurological surgery; W. Wayne Babcock on practical points in clinical surgery; Walter E. Dandy on diagnosis and treatment of brain tumors; John F. Erdmann on tumors of the breast; George Draper on the psychobiology of the peptic ulcer patient; David Riesman on treatment and guidance of patients with damaged hearts; Hugh H. Young on tumors of the bladder; Donal C. Balfour on carcinoma of the stomach; George Crile

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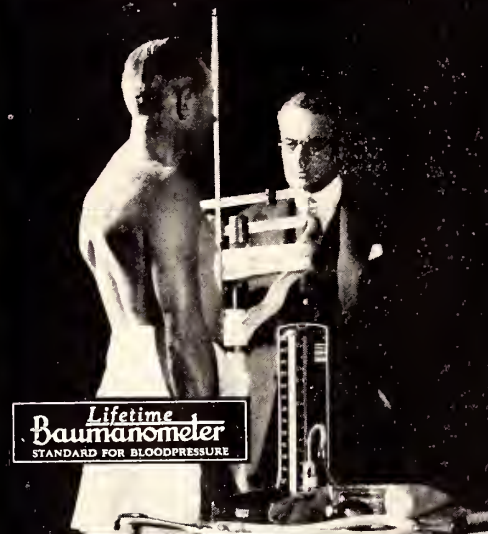
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on genesis and surgical treatment of essential hypertension; Frank H. Lahey on indications for and the surgical treatment of peptic ulcer; Leonard G. Rowntree, subject unannounced; Hugh Cabot on cryptorchidism; Robert A. Cooke on allergic diseases; Chevalier Jackson on the early diagnosis of bronchogenic carcinoma; Lawrence T. Post on ophthalmic consultations in a general hospital; Irving S. Cutter, general therapeutic methods for the protection of patients in the extremes of life; Elliott P. Joslin, protamine insulin;

Dean D. Lewis, on the diagnosis of bone lesions; Cary Eggleston, on treatment of the elderly chronic cardiac; William J. Mayo, subject unannounced; and Andrey C. Ivy, the applied physiology of the spinchter of oddi.

The Interstate Post-graduate Association is supplying an excellent program and should attract the attention of the men of our district.

A tuberculosis unit has been placed into operation in Arizona, brief mention of which was made a month or so ago. Drs. George C. Truman and George A. Hays, members of the Arizona State Health Department, deserve special commendation for this.

It consists of a Ford V-8 truck and trailer to transport the equipment. On the trailer is a complete x-ray laboratory with the most modern equipment available, including a dark room for the development of films. The trailer is 17 feet long, 7 feet wide and approximately 7 feet high. The equipment includes complete electrification for lights, sterilizers, electric fans, scales for weighing the children, a curtained dressing room, a first aid kit and folding table for emergency

use. The unit has a complete office, consisting of filing cabinets, typewriter and other office equipment, there is also a modern motion picture talking equipment with special screen and a supply of educational films. The windows have been equipped with specially built features to permit fluoroscopic examinations.

The purpose is to examine school children of all age groups for primary infections and active tuberculosis. The unit is not in any sense assuming the responsibility of the family physician in the diagnosis or treatment of any case. Skin tests will be given to those children whose parents sign written requests and at the same time give the names of their family physicians. If desired x-ray examinations will be made and the findings reported in such a way that the parent must consult the family physician for advice.

BOOK REVIEW

A TEXTBOOK OF PATHOLOGY by W. G. MacCallum, Professor of Pathology and Bacteriology, The Johns Hopkins University, Baltimore; Sixth Edition, Entirely Reset; 1277 pages with 697 illustrations; Philadelphia and London; W. B. Saunders Company; 1936; Cloth \$10.00 net.

This well and favorably known text on pathology has been completely revised and is just off the press. The author has laid special stress on the new development in endocrinology and allergy and about the vitamins. The book is now in reality a text of medicine based upon pathology; it is of such practical value to the practicing physicians that it should have a universal sale.

INTERNATIONAL MEDICAL ASSEMBLY



Interstate Postgraduate Medical Association of North America

Public Auditorium, St. Paul, Minn.

OCTOBER 12-13-14-15-16, 1936

Pre-assembly Clinics, October 10; Post-assembly Clinics, October 17, St. Paul Hospitals

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Metabolic Water (300 cc.)	Feces (100 cc.)

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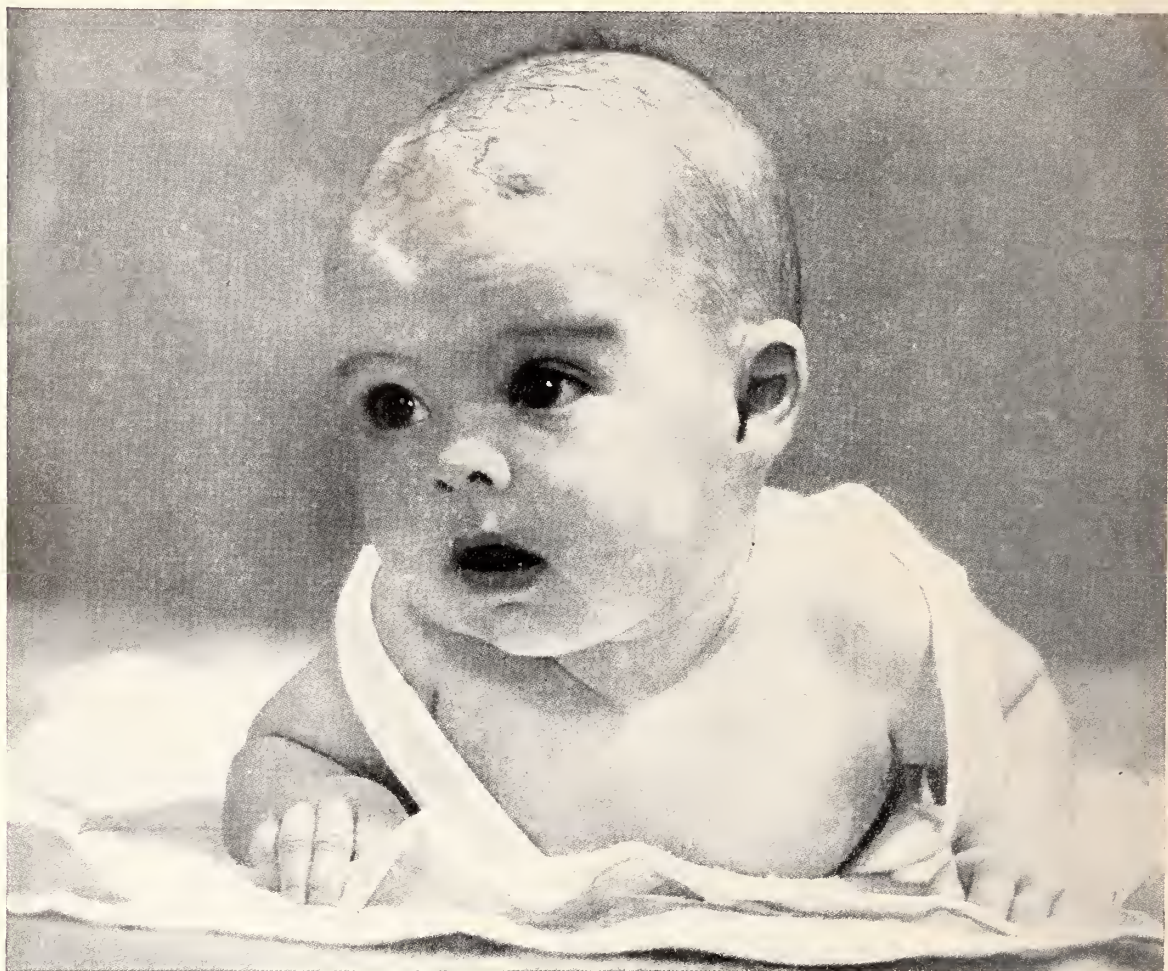
ulate the strained heart and combat shock.

After operation nutrition wanes when the patient cannot tolerate food. Karo with fluids helps maintain the water balance of the body and tides the patient over with basal energy. Karo provides 60 calories per tablespoon. It is relished added to milk, fruit juices and vegetable waters. Karo is a mixture of dextrans, maltose and dextrose (with a small percentage of sucrose added for flavor), well tolerated, not readily fermentable, and effectively utilized.



Corn Products Consulting Service for Physicians is available for further clinical information regarding Karo. Please Address: Corn Products Sales Company, Dept. , 17 Battery Place, New York City.

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He comes into this world, never having breathed, never having eaten, never having digested food. Almost immediately, his little body must adjust itself to these vital functions.

If he is like most babies, he doubles his weight in the first few months; *triples* it in the first year. Every part of his body must make adjustments to accommodate this proportionately tremendous growth.

A new baby encounters disease-producing germs for the first time, and must build up resistance against them. If he does become ill, he is without the power to tell what the trouble is or where it lies. And when upset, he fre-

quently is further endangered by the well-meant, but often harmful, suggestions of relatives and friends who "know just what to do."

Yes, infancy is so hazardous a period that, last year, the number of deaths among babies under one year of age was more than *three times* the number of deaths from automobile accidents.

The doctor is the one person equipped to give parents competent guidance through this dangerous period of a baby's life.

The doctor who sees the baby regularly can often detect sickness or physical trouble *in its early stages*. He can prescribe correct diet, proper hours of sleep, healthful and sensible handling of the habit problem. And he can start an

important immunization program, to prevent such diseases as smallpox, diphtheria, and whooping cough.

Enlisting the doctor's help—entrusting growth, diet, and general health to his supervision—is one of the most sensible precautions parents can take in those dangerous days of the child's first year.

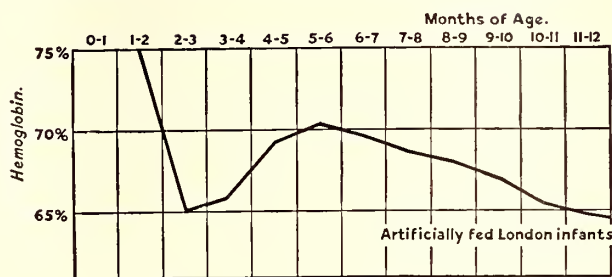
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Nutritional Anemia in Infants



Hemoglobin level in the blood of infants of various ages. Note fall in hemoglobin, which is closely parallel to that of diminishing iron reserve in liver of average infant. Chart adapted from Mackay. It is possible to increase significantly the iron intake of the bottle-fed from birth by feeding Dextri-Maltose With Vitamin B in the milk formula. After the third month Pablum offers substantial amounts of iron for both breast- and bottle-fed babies.

Reasons for Early Pablum Feedings

1. The iron stored in the infant's liver at birth is rapidly depleted during the first months of life. (Mackay,¹ Elvehjem.²)
2. During this period the infant's diet contains very little iron—1.44 mg. per day from the average bottle formulae of 20 ounces, or possibly 1.7 mg. per day from 28 ounces of breast milk. (Holt.³)

For these reasons, and also because of the low hemoglobin values so frequent among pregnant and nursing mothers (Coons,⁴ Galloway⁵), the pediatric trend is constantly toward the addition of iron-containing foods at an earlier age, as early as the third or fourth month. (Blatt,⁶ Glazier,⁷ Lynch⁸.)

The Choice of the Iron-Containing Food

1. Many foods reputed to be high in iron actually add very few milligrams to the diet because much of the iron is lost in cooking or because the amount fed is necessarily small or because the food has a high percentage of water. Strained spinach, for instance, contains only 1 to 1.4 mg. of iron per 100 gm. (Bridges.⁹)
2. To be effective, food iron should be in soluble form. Some foods fairly high in total iron are low in soluble iron. (Summerfeldt.¹⁰)
3. Pablum is high both in total iron (30 mg. per 100 gm.) and soluble iron (7.8 mg. per 100 gm.) and can be fed in significant amounts without digestive upsets as early as the third month, before the initial store of iron in the liver is depleted. Pablum also forms an iron-valuable addition to the diet of pregnant and nursing mothers.

Pablum (Mead's Cereal thoroughly cooked and dried) consists of wheatmeal, oatmeal, cornmeal, wheat embryo, brewers' yeast, alfalfa leaf, beef bone, iron salt and sodium chloride.

¹⁻¹⁰ Bibliography on request.

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VOL. XX.

OCTOBER, 1936

No. 10

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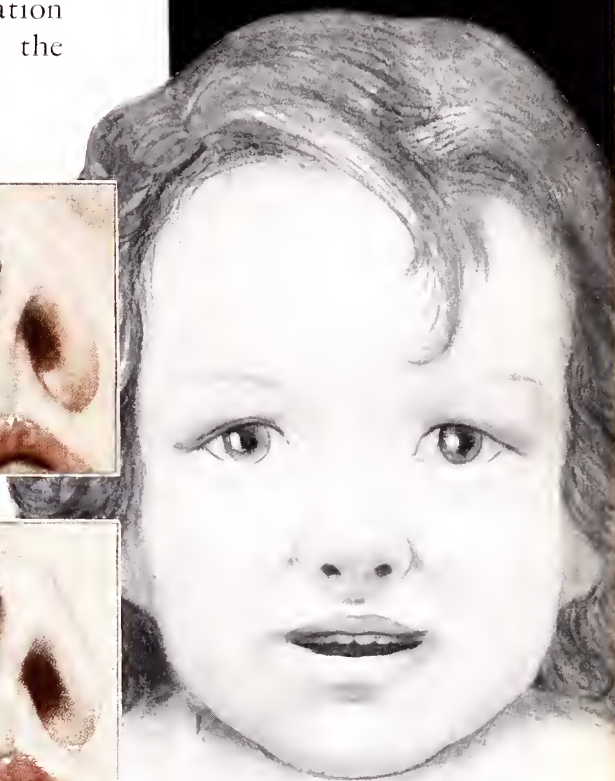
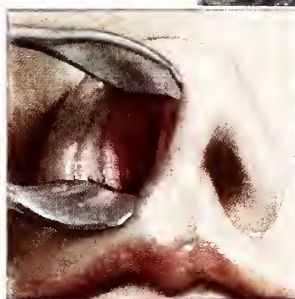
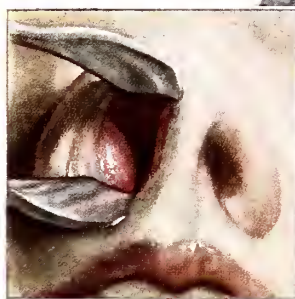
Secondary reactions are "so infrequent and so mild as to be virtually negligible" (Scarano: Med. Record; Dec. 5, 1934), and even in very young children, overstimulation or other undesirable reactions do not occur with the proper dosage.

For Children's Colds

FIG. 1. J.M.C. White, female, age 4. June 5, 1936. Acute rhinitis.

11:40 A.M. Two inhalations of Benzedrine inhaler.

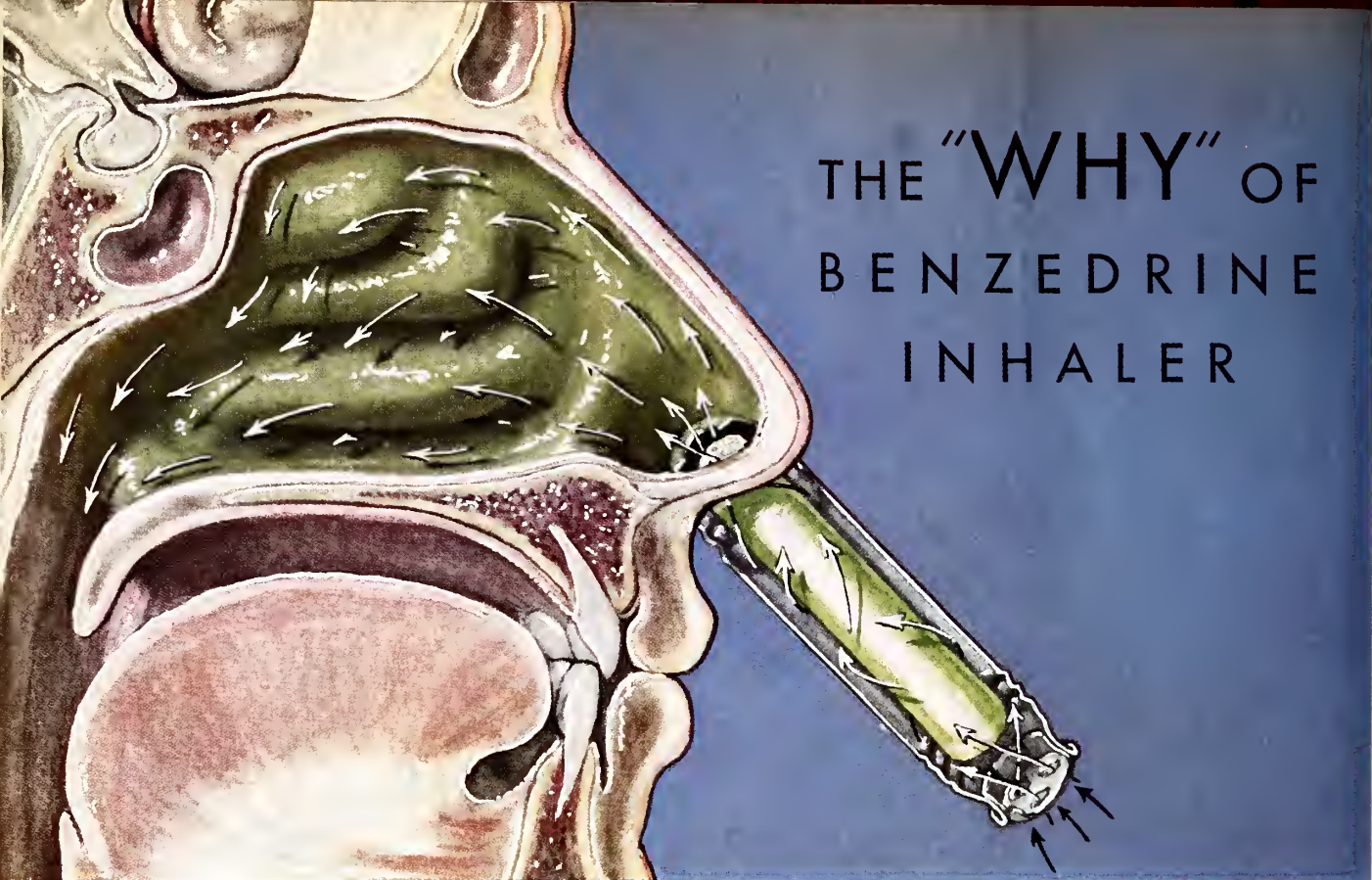
FIG. 2. 11:50 A.M. Maximum shrinkage evident.



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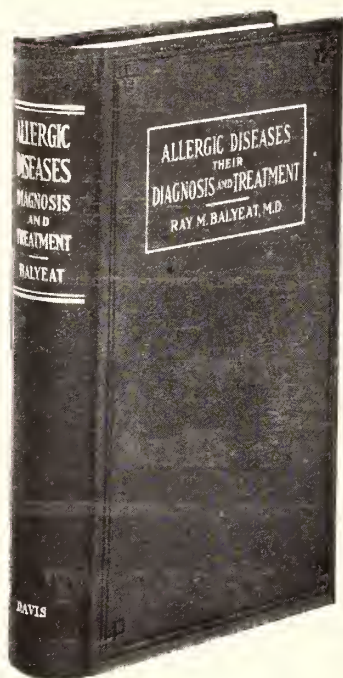


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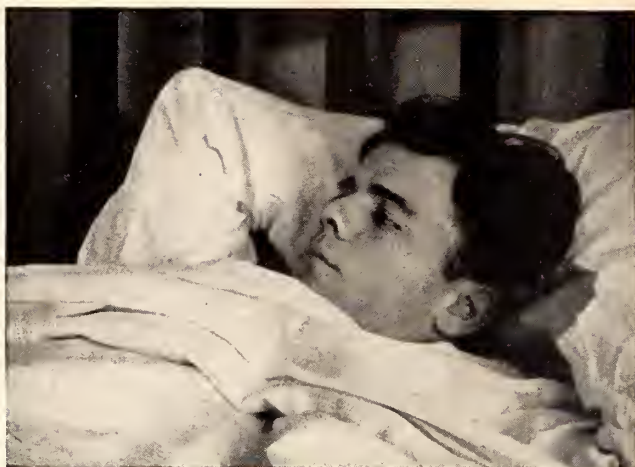
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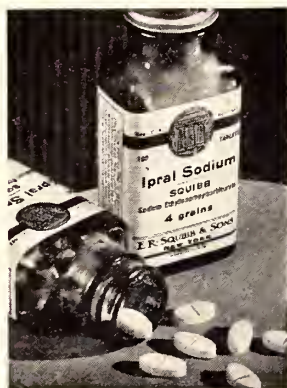
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As a direct result of many researches on vitamin concentrates, the chemical identity of the crystalline antineuritic factor has recently been described as a derivative of 6-aminopyrimidine (2).

It has been known for many years that vitamin B₁ may be destroyed by heat. In the canning procedure, a number of heat treatments of food may be involved, especially in the thermal "processing" of the product to insure its preservation. In the "process", many foods are subjected to a heat treatment after sealing in the can, to destroy spoilage organisms which may be present on the raw material. In other cases, the food is filled into the cans at a sufficiently high temperature to obtain the same result. Therefore,

the question of the effect of the canning procedures on vitamin B₁ frequently arises.

The times and temperatures necessary for the processing of canned foods are governed by a number of factors, important among them being the pH of the food itself. Highly acid foods require only short heat processes at the temperature of hot or boiling water to destroy spoilage organisms. The so-called "non-acid" or "semi-acid" products require higher temperatures — usually 240° F. (116° C.).

As might be expected, acid foods have been found to suffer only a slight loss of vitamin B during canning (3).

The degree of retention of vitamin B₁ in the non-acid foods is not as high as in the acid foods. (4).

This is partly due to the heat treatments accorded them and possibly also to their low acidity, since the vitamin is more stable in acid media.

The facts in the case may be summarized briefly by the statement that commercially canned foods may be depended upon to supply vitamin B to extents consistent with the amounts of the vitamin originally present in the raw materials from which they were prepared. Because of their widespread use, canned foods contribute a notable amount of vitamin B₁ to the American dietary.

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(1) Vitamins: A Survey of Present Knowledge
Medical Research Council, Special Report
Series, No. 167, 1932. His Majesty's Stationery Office, London

The Vitamins
H. C. Sherman and S. L. Smith
1931 Am. Chem. Soc. Monograph,
2nd Edition

(2) 1935. J. Amer. Chem. Soc. 57, 1751

(3) 1932. Ind. Eng. Chem. 24, 457

(4) 1932. J. Nutrition 5, 307

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OCTOBER, 1936

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THE MANAGEMENT OF IN- TRATHORACIC GOITER

JAMES W. HENDRICK, M. D.
Dallas, Texas

(Presented before the 46th Annual Session of the Arizona State Medical Association, Apr. 23-25, 1936).

Careful investigation in a large series of goiter cases demonstrates substernal goiter to be a rather frequent finding.

A review of the anatomy of the neck and superior mediastinum illustrates why it is easy for an enlargement of the thyroid gland, especially of its lower pole, to descend partially or completely into the thorax.

In the embryo the thyroid analogue begins at the base of the tongue and descends through it to its normal position in front of, and lateral to, the tracheal cartilages. It remains in that position unless some anomaly, or accident of development, or unusual growth such as an adenoma occurs. Expansion is restricted except downward. The trachea forms the median boundary, the cervical vertebrae and prevertebral fascia the posterior, the carotid arteries, jugular veins and sternocleidomastoid muscle the lateral and the midcervical fascia and prethyroid muscles the anterior. Therefore, the growing tumor presses on some of the above enumerated organs, or descends into the chest. The gland ascends and descends with every swallowing and this facilitates the making of a pathway through the fascial planes into the mediastinum.

The chest cavity roughly compares to a cone, the lower part of the chest being the base and the thoracic aperture the apex. This illustrates that when a tumor becomes intrathoracic, the anatomy of the chest is such that, as the growth progresses, it is difficult for it to escape.

Intrathoracic goiters may be classified into

partial and complete. In the partial the greatest diameter is above the level of the suprasternal notch. In the complete all of the goiter is below the top of the sternum. The discrete adenoma is the most frequent type of intrathoracic goiter, except in the geographic areas where the multiple colloid adenomas are endemic and hence the most common. Intrathoracic cysts develop following the destruction and absorption of the adenomatous tissue. I have never seen an intrathoracic exophthalmic goiter, although prolongation of the lower pole downward occurs with marked hyperplasia.

The incidence of intrathoracic goiter in the sexes is about one male to six females. This ratio is seen in adenomatous goiter. The average age when the patient consults the physician is about fifty years, the goiter having been present about fourteen years.

The surrounding cervical fascia and the capsule and blood vessels of the enlarging part of the thyroid descend into the thorax. Occasionally a tongue of thyroid tissue connects the intrathoracic goiter with its cervical parent. In long standing cases the band of thyroid tissue often is replaced by fibrous tissue, in which event the intrathoracic portion becomes separable and is called a wandering goiter. Frequently there is a bilateral cervical goiter accompanying the intrathoracic extension. This is prone to happen in the multiple adenomatous type. Extensions may be found not only into the thorax but between the muscle layers of the neck, or between the trachea and esophagus producing a retrotracheal goiter.

The symptoms from an intrathoracic goiter are mechanical and of hyperthyroidism if toxicity has developed. The trachea, recurrent nerves, bloodvessels and esophagus receive the brunt of the pressure.

All intrathoracic goiters press on the tracheas and may deviate, narrow, angulate, rotate and obstruct them. Tracheal cartilages

are rigid but marked pressure will soften them with alteration of their lumen. If the goiter is bilateral with the lobes opposite one another, the trachea may be reduced to a mere slit, the so-called scabbard sheathed trachea resulting. If one lobe is higher (Fig. 1) than the other and both produce pressure (Fig. 2) as when one lobe is cervical and its fellow is intrathoracic, an S-shaped trachea results. A large lobe remaining in the midline between the trachea and sternum, flattens the anterior posterior diameter (Fig. 3). In these cases, the trachea is greatly widened (Fig. 4). With this type of goiter the patient suffocates when he bends forward.

The growth of intrathoracic goiters is slow, therefore, the pressure and distortion of the trachea is gradual. The trachea may be compressed and distorted to a great degree without markedly acute symptoms. Lateral deviation of the trachea can extend until the slack is taken up, then the trachea is compressed. When the compression is marked and the lumen narrowed, respiratory symptoms ensue. (Fig. 5) The first evidence that anything is wrong may be when the patient or a friend notices the respiratory stridor.

Patients often state they are unable to sleep on one side or the other, or the back. This is more noticeable if the head is on a pillow, as this produces increased angulation of the damaged trachea, further compression of its lumen

and greater difficulty in breathing. Lahey comments on this extensively, and states that while the patient is awake he accommodates himself so there will not be marked angulation; but when he sleeps mucus accumulates below the narrow place threatening suffocation. A patient with a respiratory stridor or wheeze should have his chest examined for an intrathoracic goiter. Marked tracheal deformity is readily shown by x-ray examination.

Another rather constant finding in intrathoracic goiter is a marked dilation of the superficial veins of the neck (Fig. 6) and the anterior part of the chest. The enlarging goiter produces pressure on the internal jugular veins, interfering with the return flow of blood which must be taken up by the superficial veins. An associated thickening and edema of the skin of the face and neck accompanies dilation of the superficial veins. These patients give histories of intense congestive headaches which are relieved when the goiters are removed.

Injury to the recurrent nerves does not take place as often as one would think in intrathoracic goiter, due to the nerve fibers elongating—preventing over-stretching. However, it is well to examine laryngoscopically every case of nodular goiter. With nerve paralysis one should suspect a malignant degeneration of the adenoma.

Disturbance in swallowing is seldom en-

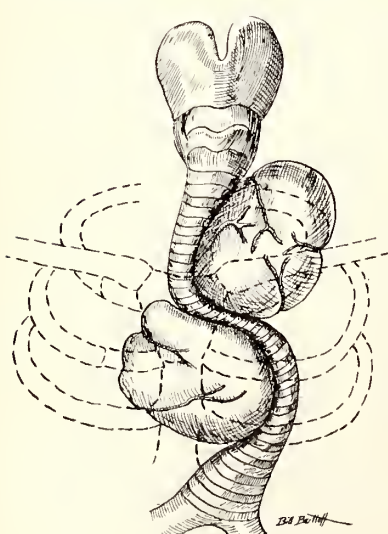


Fig. 1

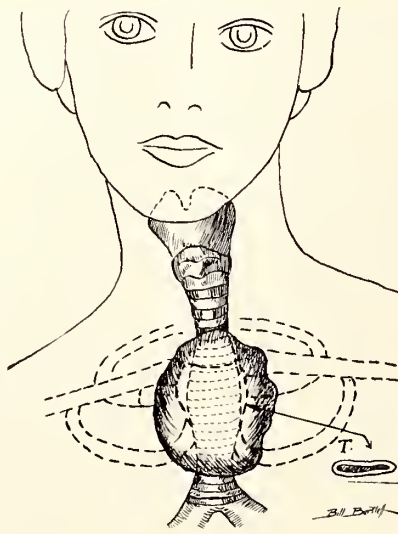


Fig. 2



Fig. 6

Fig. 1. Cervical goiter of the left lobe, intrathoracic goiter of the right lobe producing an S shaped trachea.

Fig. 2. Patient 65 years of age. Large cervical

goiter; and intrathoracic goiter, extending below arch of aorta.

Fig. 6. Dilation of superficial veins on anterior surface of chest.

countered in cervical or intrathoracic goiter, even though the tumor encircles the trachea posteriorly. The esophagus, being muscular, can be pushed aside without alteration in its lumen.

Cardiac conditions are frequent in intrathoracic goiter. The mechanism of the development of the goiter heart was thoroughly discussed in a previous paper on nodular goiter. It will not be taken up again here. Careful appraisal of the heart should be made when recommending surgical relief.

During the routine examination of patients with nodular goiter, a survey of the chest should be made. The frequency of intrathoracic extension is shown by the work of Clute in an analysis of 5,000 cases of adenomatous goiter. He found intrathoracic extensions in 21% of the cases. Careful percussion of the upper end of the sternum will show dullness if the displaced lobe is large. X-ray and fluoroscopic examinations are indispensable. The film will demonstrate deviation of the trachea. Tracheal deviation is present in 93% of the cases. Anterior posterior, semi-oblique and lateral films should be made. Fluoroscopic examination will determine if the tumor is mobile during swallowing or deep respiratory movements.

The intrathoracic goiter must be differentiated from other conditions occurring in that

area. If a cervical goiter is present, there appears a continuation of the shadow, from the supraclavicular area downward, gradually broadening out to meet that in the chest. The goiter may appear to pulsate if it is in contact with the large mediastinal vessels, which may confuse it with an aneurysm of the aorta. Calcifications within the goiter, which represent old hemorrhagic areas, is another diagnostic point. Thoracic aneurysm, a dilated aorta, shadows from the thymus gland, lymphosarcoma, dermoid cysts and carcinoma of the lung must be differentiated from intrathoracic goiter.

The most rational treatment of intrathoracic goiter is prevention. Remove all low lying adenomas before they become intrathoracic. By doing so the patient will be saved a more difficult operation.

In operating on an intrathoracic goiter local anesthesia should be used, combined with nitrous oxide under positive pressure. The latter is important, especially when the trachea has been damaged and might collapse. The blood supply comes from the superior and inferior thyroid arteries, and tissue left behind after ligating these vessels will become necrotic and may cause a mediastinitis. The goiter is held within the chest by negative intrathoracic pressure, adhesions between its capsule and the surrounding structures, and the smallness of the thoracic aperture. This



Fig. 3

Fig. 3. Large adenoma between sternum and trachea producing flattening of trachea in the anterior posterior diameter.

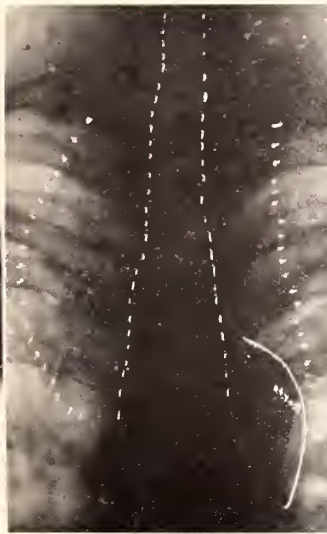


Fig. 4

Fig. 4. Patient 60 years of age. Large foetal adenoma between sternum and trachea, producing



Fig. 5

suffocation when patient bent forward.

Fig. 5. Patient 58 years of age. Large colloid adenoma, producing marked tracheal angulation and compression. Goiter had grown to below aortic arch.

aperture is about 4 to 5 cm. in the anterior posterior diameter and 8 to 9 cm. wide, and some of the space is occupied by the esophagus, trachea, thoracic duct and the large vessels and nerves. Most intrathoracic tumors can be adequately removed if care is taken to get as good an exposure as possible. Often the tumors have to be coaxed out. Having the patient cough will help to expel some of the smaller tumors.

A low collar incision is made. The pretracheal muscles and fascia are separated from the sternum, giving a wide exposure. The isthmus of the thyroid should be divided, a point of great importance as suggested by Breitner. If cervical goiter is present on either side, it should be removed to afford more room to attack the intrathoracic tumor. The superior thyroid artery and vein should be ligated and divided. The lateral thyroid vein is doubly ligated and divided, the index finger is then passed behind the tumor in the tracheal groove in the fascial plane between the tumor and the thoracic duct and pleura. By this technique no important vessels can be injured. The finger is gradually worked laterally, then anteriorly in front of the tumor until all connections in the chest have been severed. One or more double hooks are applied to the top of the tumor. Gentle traction is then applied coupled with mild pressure from below. Too much pressure applied with the finger below the tumor causes it to flatten, increase its width, making it practically impossible to extract it from the chest. The inferior thyroid artery and vein should be ligated and severed when they present themselves. Hemorrhage is not great if the vessels have been properly ligat-

ed. The shell of thyroid tissue around the capsule should be preserved, for it contains the parathyroid bodies and recurrent nerves. Occasionally the tumor will be so large that it will have to be removed piecemeal, in which case it is well to stay within the capsule of the gland; be sure that all fragments of tissue are removed. All bleeders should be carefully ligated, and the cavity tightly packed with iodoform gauze. The gauze packing should be removed at the end of 48 hours and replaced with smaller amounts until the cavity has been obliterated. By following this method infection and mediastinitis can be prevented. A secondary closure of the wound is often necessary with prolonged drainage. The trachea resumes its normal position after the removal of the tumor.

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 211 First Medical Building.

DISCUSSION

DR. G. D. MAHON, Dallas. Two complications arise in thyroid disease. Heart disease is made worse by an ailing thyroid, but is not caused by it. The cardiovascular system is greatly disturbed in goitre and a careful appraisal of the heart should be made. Patients should consult physicians early

Fig. 7. Specimen of colloid adenoma shown in figure 2. The smaller was removed from the cervical area. The larger tumor was entirely intrathoracic and weighed 460 grams.



Fig. 7

Fig. 8. Specimen of fetal adenoma shown in figure 4, weighed 230 grams, all completely intrathoracic.

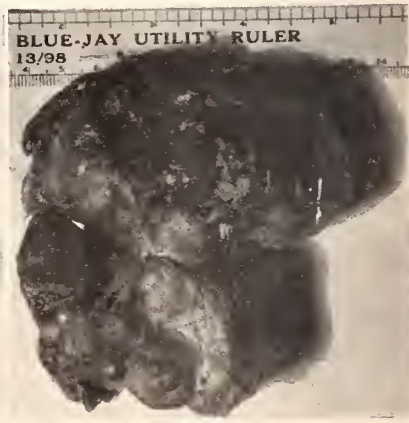


Fig. 8

for they have the symptoms of rapid heart to tell them that something is amiss and needs attention. It is strange how such a symptom should be so long endured before seeking medical advice. A second complication is that of carcinoma of the thyroid gland. It is to be hoped that the public may be brought to the realization that the earlier they consult with their physicians the better the outcome will be.

DR. REESE (California). I wish to congratulate Dr. Hendricks upon his excellent presentation of this interesting surgical subject. It is our routine to start these operations with local anesthesia and to follow through with the same if possible. The point relative to a possible collapse of the trachea, as stressed by Dr. Hendrick, is most important. If the patient will only consult with his physician early enough, preventive measures will save him a difficult operation.

DR. HICKS: How clear the picture is, once it is presented to us so forcibly! An early consultation and a thorough diagnosis would assuredly alter the seriousness of the situation. I would like to ask concerning the relationship of goitre and arthritis.

DR. E. PAYNE PALMER: Intrathoracic goitre is far more common than is generally believed. Were all physicians to think of thoracic goitre, it would be recognized and cared for much earlier than is usual. Dr. Mahon has mentioned the damage to the heart and the malignancy. All of us see cases in which we are prone to say, unless this bothers you, let it alone. We fail to see that later these cases will be serious. Let us observe them for 1 to 4 months before sending them away. Tell the patient that he may develop a toxic condition that will be found burdensome and also that carcinoma may enter the picture. Three years ago, I saw a woman whose thyroid was somewhat enlarged. I advised her to have a tonsillectomy and to come in for regular observation of the thyroid. I saw no more of her until recently when I operated her child for appendicitis. I then noted the mother's advanced condition and asked her why she had not been in for observation. She had considerable difficulty in breathing and, because of her increasing discomfort, submitted to a thyroidectomy. I removed the right lobe and little more than half of the left lobe. The examination revealed a woody thyroid.

DR. HENDRICK: Malignancy develops in 2 to 3% of adenomatous goiters, as shown by careful examinations of removed specimen. A short time ago we had a patient from Yuma, Arizona. She had had a large intrathoracic goiter for several years. After removal we found that there was a malignant degeneration of the adenoma. We treated the case with deep x-ray therapy. She has been referred to Dr. Watkins of Phoenix, Arizona, for further treatment.

Iodin is of value in the management of goiters in puberty. It should only be used in adult cases when preparing them for operation.

After a patient is 28 to 30 years of age, an adenoma in a goiter should be removed, as all of these "knots" or tumors sooner or later produce mischief.

Relative to Dr. Hicks' question as to the relationship of goiter and arthritis, we have had 21 cases of severe arthritis that also had either an exophthalmic goiter or a toxic adenoma. After removal of the goiter the arthritis cleared up promptly. In a few cases the arthritis flared up within a week to 10 days after the operation and then disappeared completely.

RECENT ADVANCES IN OTOL- OGY: PETROSITIS, FACIAL NERVE SURGERY, COCH- LEAR TONE LOCALIZA- TION.

R. C. MARTIN
San Francisco, Calif.

(Read before the 46th Annual Session of the Arizona State Medical Association, April 23-25, 1936.)

I discuss the first two topics with some background of experience, but approach the last feeling that it is presumption for a clinician to discuss highly scientific and technical laboratory modes of attack.

A recent development which fills the literature is that of infections of the petrous pyramid. The symptomatology has been well worked out by Eagleton, Kopetzky and Armour. The cardinal signs and symptoms are deep retro-ocular or orbital pain, profuse middle ear discharge or recurrence of this discharge 5 to 9 days, or later, after its cessation (with the mastoid not at fault) accompanied by a low grade temperature. Kopetzky holds that the early occurrence of paralysis of the homolateral 6th is not evidence of petrositis but that the late occurrence may be.

It has been established that the petrous may be well pneumatized, though not in direct proportion to the pneumatization of the mastoid, i. e., a well pneumatized mastoid does not necessarily mean a pneumatic petrous. It may be diploic in character, or may be made up of marrow-filled spaces. The anatomic character of the spaces determines the type of pathological process, i. e., in the pneumatic or diploic type a coalescent process develops while in the last type an osteomyelitis may result.

The abscess may rupture into the carotid canal, along the canal of the tensor tympani in which case it presents into the nasopharynx or the retropharynx; or it ruptures subdurally, giving rise to meningitis. If the perilabyrinthine cells are involved fistulous tracts may develop into the antrum, into the retrofacial cells, or into the solid angle between the superior canal and horizontal, depending on the group of cells involved. The point of the fistulous tracts from the apical cells is usually

into the Eustachian tube or canal of the tensor tympani.

Friesner (*Ann. Otol.* Dec. 1935, 44', 103) states "the postero-superior route, we found, was by far the most frequent."

How much aid in determining whether to operate may we expect from the x-ray films? Coates & Ersner have shown that many cases not giving symptoms of a petrositis show clouding on the film. We have several such cases clearing after a complete simple mastoidectomy. These may be said to be the group of cases with slight involvement not requiring intervention in the petrous.

If serial films in such a case show no improvement and the symptoms progress, then their significance is altered and further surgery may be indicated. In other words, the films are of significance only when taken in conjunction with the rest of the clinical picture.

The operative technics are first the subtemporal route which is historically first. This has been modified by Eagleton and Myerson, who reach the region of the apex by removing the floor of the middle fossa (roof of the tympanum) by continuing the incision upward and forward. Eagleton gains a wider approach by cutting down the zygomatic root. Both elevate the dura and penetrate the apex from above downward.

Myerson locates the point of downward puncture by noting as constantly recurring anatomical landmarks, the prominence of the superior semicircular canal, in front of which is a depression from which issues the greater superficial petrosal. In front of this depression is an elevation formed by the superior and anterior lip of the internal auditory meatus. The depression directly anterior to this second prominence is over the apex. In examining this region in 15 skulls, the difficulty of approach was noted and we failed to see how drainage uphill was of much benefit. Myerson cites 1 case in which this operation from above failed to stop the process which finally ruptured into the nasopharynx with cure.

The fault of the subtemporal routes lies in drainage from above, though relieving epidural abscesses which have ruptured through.

The procedure giving the best drainage is the Kopetzky-Almour which establishes it downward. It consists in a drill opening be-

tween the cochlea and internal carotid made at an angle of 20% from the axis of the external auditory canal. The point of puncture is the Eustachian tube's inner orifice where its roof and medial wall join. The space between cochlea and artery averages 6.2 mm., ranging from 4-10 mm., according to Kopetzky and Almour. Wide approach to the puncture site is obtained by shaving down the anterior canal wall and the zygomatic root. In several specimens examined by us no such wide space existed and such puncture must have hit either cochlear tip or the internal carotid. In the hands of the originators, this may be a safe approach but it is dangerous for the occasional operator.

Our own limited experience suggests a thoroughly done radical mastoid with search for fistula in the Eustachian tube region, in the retrofacial cell region and in the solid block between the horizontal and superior canals. What of the cases showing no fistulae? We would remove the roof of the middle ear and Eustachian tube elevating the dura over the apex. If no fistula was found we would stop as we believe that in our hands at least more cases will recover by this method than by the more extensive radical procedures. Eagleton (*Ann. Otol.* 1935, 40:1125) also feels that "infection within the petrous apex has a tendency to spontaneous subsidence, efficient drainage of the associated mastoid suppuration being all that is necessary to effect a cure." This, he holds, is due to the red bone marrow of the apex which has great power to withstand infection.

We have seen 6 cases of petrositis, 2 of which ruptured into the nasopharynx with recovery; one showed a fistula just above the knee of the facial (recovery); one recovered after a thorough simple mastoidectomy and the point of drainage was never found; one case died from a meningitis and presented a neck abscess where it had ruptured along the carotid as well; the last case recovered after drainage was established through the sublabrynthic cells.

Our premise is that more lives will be lost by too much radical surgery, as was the case in the labyrinth operations, than by conservatism. This is not a criticism of the excellent anatomical and surgical work of various men but is a word of warning to the enthusiast.

Friesner states that "suppuration confined within the petrous pyramid has a marked tendency to heal spontaneously."

The mortality (Seydell, *Ann. Otol. Dec.* 1935, 1068) in 41 cases published in 1934 was 34%. Kopetzky has a rate of 16%. Our limited series is 17%. In only 60% of these cases was the clinical picture typical of suppurative apicitis.

The effect on hearing depends on the type of surgery. If a radical mastoidectomy has been done, the hearing is of course affected. If a thorough simple mastoidectomy has been done, there should be no hearing loss.

Facial Nerve Repair

The second recent development in otology is the **surgical repair of the facial nerve**. The methods available are direct anastomosis and nerve grafting.

We have recently gone over our small series of cases and find that emotional control has not returned 100% in any of them. The best result obtained from the standpoint of function was where end to end anastomosis had been done. The facial symmetry is restored in all the cases completed, but emotional control is lacking to some degree in all cases. For instance, the patient may not close the eye completely when told to do so, but may do so when told to show the upper teeth and vice versa. Improved operative technic and knowledge of regeneration may obviate this.

The dangers of the operation have never been stressed. The first is serous labyrinthitis that may occur from shaving down on the horizontal and semi-circular canals in freeing the nerve in its horizontal portion, or it may also be due to disturbing the stapes in the same procedure. The second danger is to hearing, because the attachment of the drum may be disturbed in dissecting out the nerve in its upper portions. Our experience has been that the vertigo and nystagmus subside in about 4 days and that the hearing is not damaged by disturbance of the drum as it soon reattaches itself. If the facial nerve has been originally injured while doing a radical mastoidectomy, then the resultant hearing loss is that of the radical mastoidectomy and not of the secondary nerve repair.

We are still of the opinion that better results will be obtained if operation is postponed un-

til an aseptic field is obtained. The time lost is more than compensated for by the lessened chances of infection and sloughing with failure of apposition.

All cases we have seen that showed a complete injury on recovery from the anesthetic have had such damage that repair was indicated. Frequently an injury is not revealed until hours or days after operation. All of these cases have cleared after loosening the packing and following a conservative course, not decompressing the nerve.

The post-operative care is important. The muscle sagging must be checked by strapping with adhesive tape. Massage is avoided as it stretches the muscles already slowly stretching from the pull of gravity. Electrical stimulation is of no value. Emotional control is taught by mirror practice, but should be discontinued as soon as contractures are noted. These are manifested by overaction of the paralyzed side; we have seen but one such case.

The care of the wound consists in letting the nerve suture, or graft severely alone, merely wiping out the external canal's outer portions with sterile cotton. No solutions are used but occasionally we have insufflated a small amount of boric acid powder. We have never used gold foil for covering, nor moistened the graft with salt solution, as the secretions of the wound attend to any necessary moistening and do not disturb the apposition of the segments.

We have given the matter of operating cases of Bell's palsy serious consideration, but have never done one. It is stated that decompression of the nerve by removing its bony covering and slitting the sheath, permits regeneration. The cases Duel has operated have shown a nerve trunk which spread apart its incised sheath much as a rubber tube incised in a tightly fitting fibre sleeve. The nature of this size change in the nerve is not known as sections are not available since one is not going to add resection of a nerve segment to the perils of regeneration after decompression.

Physiology of Hearing

The work on tone localization in the cochlea done by various observers allows us to feel that progress is being made in a field in which our specialty has long lagged behind. It owes

its impetus to the Wever-Bray phenomenon—the measurement of differences in electrical potential arising when sound stimuli of known frequency and intensity are applied to the ear. There is disagreement as to whether localization occurs, as different methods give different results.

Briefly summarizing the methods and results:

Studies of human temporal bones from patients who had antemortem audiometric tests made, "show many examples of lesions of the lower basal turns in ears with impaired hearing for high tones but very few examples of lesions in the upper tones in ears with poor hearing for low tones." (Guild) Hearing is possible in the absence of the organ of Corti. (Bunch & Wolff.)

Animal experimentation, where pickups were used, different points on the cochlea of the guinea pig seemed to show a tone localization. Where drilling and electro-cauterization at definite points were done, no such localization was noted. (Hughson-cautery) (Dworking-drilling.)

They have served to open up an entire field of work and thought. From this mass of experimental work the truth will emerge, enabling us to apply clinical tests more intelligently and aid the great group of hard of hearing patients to whom we are of little or no service at present.

INDICATIONS FOR OPEN OPERATION IN FRACTURES

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(Read before the 54th Annual Session of the New Mexico Medical Society, May 9-11, 1936.)

The subject is broad and its details might well entail much time. I purpose to make it a brief intelligible presentation of the fundamental principles and essential details.

Open reduction of fractures is unnecessary in the majority of cases. If a fracture can be reduced by closed methods with good results, open reduction is clearly contraindicated and an evidence of undue meddlesomeness. Open work tends to disturb both periosteum and blood-supply; hence bony union will inevitably

be delayed in proportion to the damage done.

The indications for open operation may be posed under the following headings: Fractures which may not otherwise be replaced and maintained or cases in which too much loss of time would be occasioned by conservative methods; interposition of soft parts between fragments; small isolated fragments which have not united, in all likelihood will not unite and are not essential to good function; non-union and mal-union. (Compound fractures have been purposely omitted.)

The choice of method for direct or internal fixation, is of importance. Certain fractures demanding open reduction may require no especial device for internal fixation because external support will suffice. Where firm fixation is needed, one may resort to the use of heavy chromic catgut, kangaroo tendon, bone pegs or other forms of bone graft. When suture materials are used, they must be heavy and of sufficient strength to stand the strain. Much of the security of the fixation will depend upon the conformation of the fractured ends. Where a mechanical condition favors slipping or renders it more or less inevitable,

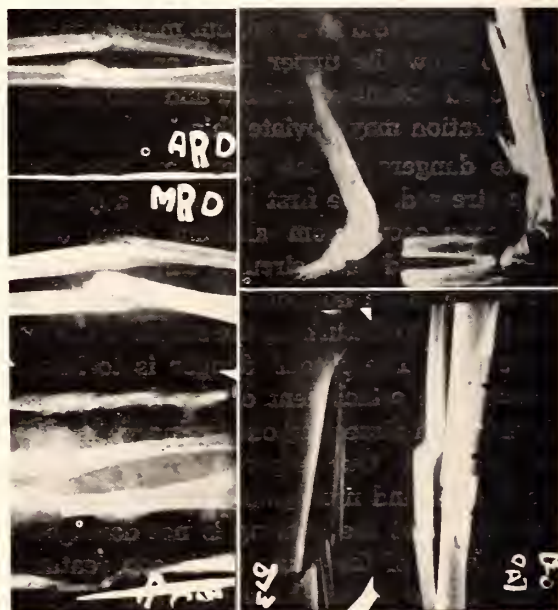


Fig. 1. Comminuted fracture of the humerus with good bony union shown at right following intermedullary peg of autogenous type from tibia. (upper right).

Fig. 2. Non union of tibia after 7 months with sliding bone graft. Resulted in good bony union. (lower right).

Fig. 3. Case of neglected fracture after several weeks. Open reduction of fracture of radius. To overcome the pull of contracted soft parts, a strand of kangaroo tendon was looped about the distal fragment and held tautly outside the plaster-of-Paris dressing by means of artery clamp.

one often may model the bone ends, making them mutually interlocking. The late Dr. Nichols of Boston very aptly put it in the words: "Make them want to stay together." Each case is a law unto itself and one must depend upon his own mechanical judgment in determining the steps to be taken. Sharp spicules may require removal. These measures may allow such excellent dove-tailing of the fragments that no great amount of strain will be exerted on the fixation material. It is of vital importance to have firm contact between the ends of bones, regardless of the nature of the fixation material. Bone pegs may be of boiled beef bone or of the autogenous variety, the latter being preferable if there is doubt as to the probability of union. The intramedullary peg is useful in fixing some fractures of the long bones, especially the oblique, or spiral kind. Metal plates and wires are to be avoided as they remain as foreign bodies and tend to interfere with callus-formation and give trouble later on. Nails, screws, staples and the like have their advocates but are open to similar objection. They may be left protruding through the wound for convenient removal but this appears to invite infection.

Certain crushing fractures of the vertebral bodies are perhaps best managed by means of spinal fusion by the Hibbs method. This is certainly true of old, improperly treated cases in which deformity and painful disability persist.

Of the fractures requiring open reduction, transverse fracture of the patella is a pre-eminent example. Wide separation of the fragments usually results due to strong pull of the quadriceps group. Open reduction should be the rule in such circumstances. Adequate fixation may be had with accurate suturing of the tendinous capsule and periosteum about the patella. This may be reinforced with heavy chromic gut or kangaroo tendon passed through drill holes in the fragments. Autogenous fascial strips have also been used.

Fractures of the olecranon will often show more rapid and definite results with open fixation, though much will depend upon the amount of separation of the fragments. Not infrequently, fractures about the distal end of the humerus will require open reduction and

fixation despite our best efforts at closed treatment.

The humerus, femur, radius, ulna, and even the tibia are often the seat of fractures which do not lend themselves to sustained reduction. This may be due to the obliquity, the presence of unmanageable, sharp-pointed spicules or other mechanical difficulty, aided and abetted by marked muscular spasm. When both forearm bones are the seat of such injuries, the problem becomes much more complicated. Where one of two parallel bones remains uninjured, the problem is easier as it will act as a natural splint and fewer open reductions will be necessary.

Especially will open reductions be demanded in neglected fractures of days' or weeks' duration. These likely would have been easily reducible at the outset but with the lapse of time and the contracture of surrounding and attached soft parts, reduction may have become difficult or impossible. Moreover, there is a marked tendency to slipping after reduction. Fibrous tissue-formation adds materially to the difficulty.

Another fracture in which open reduction and fixation must be considered, is the transverse fracture of the posterior part of the os calcis with its natural tendency to upward displacement due to the pull of the calf muscles. A well-placed bone peg should be sufficient to maintain reduction.

Aseptic technique is of such vital importance as to warrant emphasis. Infections are inimical to good results. Meticulous care is necessary and unless one can command whole-hearted cooperation and a first-rate hospital, open operations should not be undertaken. Bone and joint tissues offer little natural resistance to bacteria. Infections in these parts are persistent and difficult of eradication. Strict Lane technique is difficult of effectual execution where the operating room force is constantly shifting. Fortunately, it is not indispensable and good work can be done without its use if every person having to do with the operation does his part well and the numerous small details are attended to. With preexisting infection, repair work on bones might well be postponed until the infection has been overcome.

In case of small, isolated bone fragments

unlikely to heal or requiring too much loss of time in the process, it is often good practice to remove them, provided of course, that their absence will entail no loss of useful function. One, however, must exercise great care in this connection as the removal of important bone fragments of a major comminuted fracture may seriously compromise or even prevent bony union. The extirpation of too much viable bone in compound fractures is all too common.

Mal-union, or vicious union, may require osteotomy with readjustment of the alignment and apposition, if the functional or cosmetic result is sufficiently bad. The possibility of non-union following such interference should be taken into consideration in deciding on the necessity for radical intervention.

With the advent of the automobile and the increasing employment of high-powered machinery in industry has come a great increase in multiple fractures. A number of fractures in a patient at the same time, has a definite influence on that patient's capacity for healing them. Too much work may be thrown suddenly on the patient's osteogenetic powers and calcium reserve so that non-union ensues in spite of excellent reduction and fixation. With less perfect treatment, the results are apt to be proportionately worse. Delayed reduction of fresh fractures is doubtless a frequent factor in non-union. There should be a time-limit in the use of conservative methods for reducing fractures. Too much time is often wasted with various forms of traction. By the time reduction is finally accomplished, the bone may have lost its "urge" to heal, showing plainly that an earlier open reduction would have been far preferable. Of course, one must not be too quick to assume that there is non-union. It may be simply a delayed union which, with patience, will heal. The correct interpretation of the x-ray plates is a matter of paramount importance in ascertaining the presence of definite non-union.

With definite non-union, open operation is no longer debatable except in such patients as are too old or otherwise debilitated. The fractured ends of the bone must be exposed and freshened, and intervening fibrous tissue removed. At times, one must deal with hard eburnated bone and its excision may be demanded. One should seek to bring healthy bone ends into contact. It is well to reestab-

lish the marrow cavity when closed over. Fresh, autogenous bone grafts are useful—almost indispensable. The choice of osteo-periosteal grafts, sliding inlay graft from the involved bone or of inlay or on-lay graft from the tibia, must remain a matter for the judgment of the surgeon as suited to the needs of the patient treated. Where there has been much loss or absorption of bone, making end-to-end approximation impossible, one has to consider the advisability of operative shortening of the parallel bone in the leg and forearm. To expect the filling in of too great a defect of this nature may be to anticipate too much of the natural healing forces.

Perfect results are not always obtainable in non-union cases, even in most experienced and skilful hands. If the first effort should fail, it is well to repeat the operation, as persistence is often rewarded with success. Dr. Albee has stated that he would repeat operation as many times as needed to bring about bony union if he could continue to command the cooperation of the patient.

In dealing with non-union of the neck of the femur, the procedure selected will depend upon the condition of the neck. When absorption has already taken place, the Whitman reconstruction operation will bring about stability and relieve most, if not all of the pain. If the neck of the femur persists with little or no absorption, a large bone peg of the autogenous type placed in a drill hole through the greater trochanter and neck is an admirable procedure, treating the fractured ends as in other non-unions. Accurate reduction and fixation of the fresh fractures will eliminate the necessity for open operations in a large percentage of the patients and there is little basis for the frequent complaint that these patients are too old to expect results. With the facilities now available for lateral x-ray plates, one should not be in doubt as to the accuracy of reduction of a fracture of the neck of the femur. The Whitman method has long been a standard procedure though we are now hearing much about the use of Kirschner wires and the like for direct, internal fixation of these fractures. Whether or not such methods represent an improvement is still a mooted question.

I have endeavored to present briefly a clear and accurate exposition of the subject with a

sort of resume of my personal experience preferable I hope to a stilted text-book delineation. I hope I have presented points of practical importance which will prove helpful to those whose duty it is to care for seriously injured and disabled patients, many of whose conditions are baffling in the extreme and require our best efforts and skill for relief.

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Ocular Changes from Central Nervous System Syphilis and the Administration of Tryparsamid

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(Read before the 46th Annual Session of the Arizona State Medical Association, April 23-25, 1936.)

With the introduction of tryparsamid into neuro-syphilitic therapy, there has been a renewed interest in ocular changes in syphilis, together with discussion regarding the effect of tryparsamid on the visual apparatus.

Ocular changes in Syphilis: Once the spirochete has entered the organism, there is no stage of the disease in which eye symptoms from nervous system involvement cannot appear. Systematic examinations of cerebrospinal fluids have shown that pathological changes appear in a definite percentage of the early secondary stage and that muscle palsies, swelling of the optic nerve and abnormalities of the pupil are not uncommon. These changes are usually fleeting; they are not considered here. They may be, however, the only later signs of cerebral disease.

I consider here the **ocular signs in cerebrospinal lues, tabes and general paralysis**. In cerebrospinal lues, 30% show evidence of the disease during the 1st year according to Lang¹, while the majority of cases of tabes and general paralysis occur between the 6th and 11th years after infection. While these diseases are caused by *spirochaeta pallida*, their clinical manifestations, pathological picture and response to therapy are so varied that they will be considered separately. Combinations of these diseases occur and do not present a

"pure" picture. Cerebral lues may have psychic anomalies that make the differential diagnosis of general paralysis difficult and spinal changes may produce a pseudotabes.

In **cerebral lues**, the process attacks the meninges primarily, especially the pia mater and the vessels. In the meninges, the process develops either as a simple or a gummatous meningitis, or perhaps as a single, larger gummatous swelling that simulates brain tumor. Should the brain be secondarily involved, it is known as meningoencephalitis. The involvement is usually an endarteritis perhaps causing obliteration of the vessel with softening of that area of the brain. Circulatory disturbances are also produced by pressure of gummatous meningitis often located in the area of the chiasma between the peduncles in the fossa interpeduncularis. A glance at the topography of this area shows the many possibilities of damage to the sensory and motor functions of the eye.

Meningeal disease produces almost constant headache and is a diagnostic sign in non-characteristic nerve lesions, especially if it shows nightly exacerbations.

Choked disc with its typical signs may be present and cannot be differentiated from the choked disc of brain tumor. Nonne², in the pre-Wassermann era, reported a case of a woman, age 29, suffering from all the symptoms of brain tumor who was operated upon and in whom the tumor mass was removed. Microscopic section showed a meningoencephalitis gummosa.

Optic neuritis also occurs frequently in this type of lues. The optic neuritis is caused either by an encroachment and extension of the basilar inflammation or by the rarer gummatous disease of the optic nerve, usually an extension from the chiasma. Often at the time of the first ophthalmoscopic examination, a neuritic atrophy or a simple atrophy is already present. Landegger³ reports a case in which 6 months after the primary infection there was a bilateral neuritic atrophy with amaurosis of 1 eye and marked contraction in the field of the other eye.

From the above, it is readily understood why a more or less regularly **contracted field** is so frequently seen in **cerebrospinal lues**. This does not mean necessarily, as shown by

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the results of therapy, that the fibers have been damaged. Their function may be temporarily impaired by pressure of the inflammatory or gummatous processes. The papillomacular bundle is never involved alone as seen in the intoxications or multiple sclerosis. When the macular area is involved the field shows a wedge-like defect coming in from the periphery, although at times it is necessary to use small test objects to demonstrate this.

The most **characteristic field defect** seen in lues of the central nervous system is a peculiar palpebral slit-like peripheral field contraction. The contraction is chiefly in the upper and lower portions of peripheral fields. The central visual acuity is usually unimpaired and the defect is discovered during a routine examination as it rarely causes symptoms. According to Lillie⁴, who first called attention to this field, it is observed only in patients with syphilis of the central nervous system.

Retrobulbar neuritis is a rare finding in cerebrospinal lues. Langenbeck⁵ found that only 7% of all cases of retrobulbar neuritis were of luetic origin.

Kollner⁶ feels an important early sign of neuritis are **scotomata** for blue and violet, which he was able to demonstrate in 10 cases.

The fact that the gummatous basal meningitis frequently attacks the **chiasma**, is well known. According to Uthoff⁷, 19% to 20% of all temporal hemianopsias are luetic in origin. Either the chiasma itself is the site of the luetic lesion, or it becomes secondarily involved from the gummatous processes in its immediate vicinity.

Bitemporal hemianopsia is rare; Uthoff⁷ found only 2 cases among 100. Bitemporal hemianopic paracentral scotomata have also been observed. The most common finding is temporal hemianopsia with amaurosis of the other eye. A case of true binasal hemianopsia has been reported by Sequini⁸.

Lesions in the region of the hypophysis may produce dysfunction, as shown by de Schweinitz⁹ and others. There may be dystrophic symptoms combined with temporal hemianopsia. The occurrence of polyuria and polydipsia in basilar lues has long been recognized.

The fundus may be normal in disease of the chiasma but when the process has long endured, atrophy is often present.

A lesion in the optic tract can be considered the cause of homonymous hemianopsia when descending atrophy hemianopic pupillary reaction and one-sided pupillary dilation are present.

Ocular Muscles: The oculomotor nerve is frequently involved. This is not surprising when one remembers its exit in the interpeduncular fossa a common site of basilar gummatous processes. In addition to the extrinsic muscles, the sphincter and accommodation are frequently involved. Isolated muscles often are affected. Thus unilateral or bilateral ptosis occasionally accompanied by pupillary disturbances, is common. At times, there may be just fleeting paresis although this is more characteristic of tabes. The isolated involvement of the superior rectus is also frequently seen. Involvement of the 6th nerve is relatively frequent and is often bilateral, while lesions of the 4th nerve are infrequent and usually unilateral.

Even though inequality of the pupils and disturbances of the reflex mechanism are seen in cerebral lues, the characteristic picture of the Argyll Robertson pupil belongs primarily to tabes and general paralysis. In cerebral lues, inequality of the pupils and the sluggish reflexes are usually accompanied by oculomotor symptoms. Loss of light reflex with retention of convergence reaction is seen fairly frequently. Isolated ophthalmoplegia interna is a rare finding.

Involvement of the trigeminus with resultant keratitis neuroparalytica, and facial followed by lagophthalmus, may also occur.

Three **important eye signs** are present in the initial or early stage of **tabes**: Temporary muscle palsies, disturbances of the pupillary reflexes and optic atrophy. These may antedate the real symptoms of the disease by many years.

The usual ophthalmoscopic picture of tabes is a uniform, primary optic atrophy with clean-cut disc margins. Blurred disc margins and a grayish color are suspicious of complications either of a basilar nature or a congenital nerve condition (pseudo neuritis). The vessels only rarely show changes from the normal in course and caliber.

The picture of atrophy usually exists before the patient observes visual disturbances or other symptoms that bring him to the physi-

cian. The visual disturbances may be slight even with the ophthalmoscopic picture of complete atrophy. Thus, the fields may show great variation in cases that appear to be equally involved. Rather frequently, there is marked contraction of the color fields before there is involvement for form.

As pointed out by E. Fuchs¹⁰, central scotomata also may appear. In these cases in contrast to the scotomata of intoxication, the periphery is also involved.

E. Fuchs¹⁰ and Zimmerman¹¹, among others, have reported bitemporal hemianopsia. This is now considered as being due to a symmetrical peripheral contraction or from a basilar involvement. Binasal hemianopsia, as A. and J. Pines¹² pointed out, must be considered a chance symmetrical localization of lesions.

The value of light adaptation as an early symptom is still doubtful. The course of the atrophy is progressive and practically always leads to blindness although stationary for years.

The pathogenesis is still doubtful but it seems to be fairly well established that the degeneration is primarily in the optic stem or perhaps the chiasma and not the retina.

Temporary **muscle palsies** with resulting fleeting diplopia have long been recognized as typical of tabes. In the later stages, the palsies may persist. Of the various muscles those supplied by the 3rd and 6th nerves are about equally involved, while lesions of the 4th nerve are rare. Involvement of associated movements also is occasionally seen.

Pupillary changes: The Argyll Robertson pupil has long been associated with tabes. The typical pupil that reacts normally or hyperactively to convergence but not to light is indicative of syphilis and is usual with tabes or general paralysis. The pupils may be normal in size, abnormally small, unequal and may dilate imperfectly with mydriatics. According to Uhthoff¹³ they are associated with miosis in 30% of cases, while Mott¹⁴ found that in 15% of the cases the pupils are inactive to both light and accommodation. Lowrey and Benedict¹⁵ found abnormal pupillary changes in 70% of their cases. Only rarely is tabes seen without pupillary changes.

General paralysis is frequently associated with **tabetic symptoms**. Reports of field chang-

es without demonstrable fundus pathology in these psychically ill patients, cannot be considered reliable. The percentage of optic atrophy and muscle palsies, however, is smaller than in tabes. According to Uhthoff¹³ these changes occur only about half as often as in tabes.

As the result of inadequate treatment, **congenital lues** may produce lesions of the central nervous system, comparable to the acquired type.

Congenital lues may cause **cerebrospinal changes** with optic neuritis and occasionally an optic atrophy of the non-tabetic type. In addition, muscle palsies comparable to the acquired type have been described. Pupillary disturbances with or without changes in accommodation are an important sign of disease of the nervous system. Usually, the pupils are dilated and more or less fixed. Nonne¹⁶ and Fleck¹⁷ reported Argyll Robertson pupils, in adults with congenital lues, in whom this was the only sign of involvement of the nervous system.

The clinical entity of **juvenile tabes** from congenital lues is well established. Parker¹⁸ has shown that the predominating sign is optic atrophy, which occurs 2 to 3 times as often in children as in adults. The atrophy is usually progressive and the prognosis poor. The pupillary changes are similar to those of the adult type excepting that miosis is seen more rarely. Muscle palsies are infrequent in juvenile tabes.

Juvenile paralysis is seen more frequently than is tabes. According to Schmidt-Kraepelin¹⁹, optic atrophy occurs more frequently than in the acquired type. In addition, in the congenital type, the pupillary changes show a higher percentage of mydriasis, loss of light and accommodation reflexes than do those of the acquired type.

From the therapeutic point of view, the **prognosis** of eye complications is usually good in cerebral lues; the earlier the disease is treated, the greater the possibility of complete recovery. In tabes and general paralysis, the prognosis is not good. In as much as these diseases are often associated with cerebral lues, energetic therapy should be instituted, as some of the lesions due to the meningitis, etc., will clear under the therapy.

In recent years, **tryparsamid** has been used effectively in the treatment of central nervous system lues. Because of reported untoward effects of the drug on the optic nerve, there has arisen a good deal of confusion regarding its safety.

The **ocular symptoms from tryparsamid** can be divided into two groups, according to Lillie⁴; (1) Subjective symptoms consisting of heat waves or other types of scintillating scotomata that occur after the 2nd or 3rd injection; ophthalmoscopic examinations and fields are negative; when treatment is discontinued, the symptoms disappear and after a short interval, can usually again be instituted without symptoms; (2) a contraction of the field of vision, usually, slowly progressive, but occasionally rapid with loss of central vision; during this time, the optic nerve may develop palor or even show signs of simple optic atrophy.

Whether or not the **drug is neurotropic**, is still **unsettled**. Were the drug neurotropic, retrobulbar neuritis, as produced frequently by alcohol, tobacco, etc., should be present. This syndrome, however, has not been observed where it could be attributed to tryparsamid. At the present time, it is generally accepted that tryparsamid activates latent ocular syphilis, according to Lillie⁴, "either through idiosyncrasy, as suggested by the subjective symptoms or through a provocative syphilitic process."

Lazar²⁰, and others, have been unable to demonstrate experimentally, changes in the optic nerve, chiasm or brain of lower animals attributable to tryparsamid. That the drug can precipitate permanent damage to the visual apparatus, can be doubted.

Patients to be treated should have a careful ophthalmic examination, especially visual field studies, before treatment is instituted, and for the first 3 to 6 doses, and fields should be examined before the next treatment is given.

The vital ophthalmic tests are those of fields and visual acuity and not fundus examination, in which no change may appear until weeks after the damage has been done. Symptoms rather than signs, however, furnish the real warnings.

Mayer and Smith²¹ and others, feel tryparsamid causes no increase in an atrophy where syphilis has previously caused damage. Lazar²⁰

on the other hand, feels that the presence of optic atrophy or constricted fields are positive contra-indications for the use of the drug. Stokes²² states if warning signs appear, the drug should be completely and immediately discontinued.

At the University of California luetic clinic, under the direction of Dr. Norman Epstein, 5,000 gms. of tryparsamid have been given since 1932. The dose consists of 2 gms. weekly for 15-25 doses. We feel that atrophy is no contraindication but have advised against its use in optic neuritis. Patients are carefully examined in the eye clinic before treatment is instituted, and following each of the first 6 injections. In only a few instances have there been field changes that warranted discontinuance of the drug. One of these was later shown to be a case of hysteria.

Where symptoms appeared, the drug was stopped for 3 to 4 months and then in almost every instance, could be tolerated. There have been no cases of loss of vision that could be attributed to tryparsamid.

The percentage of danger from tryparsamid is no greater than in some other preparations, providing the proper precautions are used. Of these, the visual acuity and careful field studies during the first 6 treatments are of the greatest importance.

Dr. Geo. N. Hosford (San Francisco): Dr. Cordes has given us a thorough presentation of the subject. Whether the disease or the treatment causes the damage to the eye grounds is problematical. Literature proves the situation either way. The only way to settle the matter is on theoretical grounds. An examination of the eyes before treatment is instituted and after the first few injections, as pointed out by Dr. Cordes, will demonstrate whether field changes warrant the discontinuance of the drug. Many consider it wise to discontinue the drug when under suspicion. However, we should not blame the drug for an optic neuritis in a syphilitic until we are sure that nothing in our way of investigation or treatment is at fault.

DR. CORDES: Literature does report cases of blindness due directly to the use of the drug. In our experience we have had none of these cases, yet we recognize their possibility.

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DINITROPHENAL CATARACT

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Los Angeles

(Presented before the 46th Annual Session of the Arizona State Medical Association, April 23-25, 1936).

At the meeting of the American Medical Association at Atlantic City in June, 1935, Tainter, Stockton and Cutting¹, read their final report on the dose of alpha-dinitrophenol as a metabolic stimulant in the treatment of obesity. They reviewed previous clinical reports on the action of the drug under different conditions, and its effect on various body functions. These studies had shown no evidence of kidney or liver damage, or alteration of the blood cell, count and, characteristics. Their experimental work and clinical experience with the drug had been for 4 years, during which time it had been administered to hundreds of patients.

Summary of Cases: Their final report included 170 cases, 150 of which were women. Ninty-nine had no previous treatment and 71 had been either on diet, thyroid, or combined treatment. In their series the only treatment was dinitrophenol, and the patients were advised to partake of a normal but inexcensive diet, not rigidly coontrolled.

The drug used was the sodium salt of 2-4 alpha-dinitrophenol of a melting point between 296 and 298 degrees centigrade. It was of the highest purity obtainable from commercial sources; but chemical tests were made because certain products had been found by them to be highly contaminated and unsafe for medicinal use.

The method of administration was 100 mgms. daily for the 1st week, then 200 mgms. daily for several weeks, succeeded by a gradual increase until the level of tolerance was reached or satisfactory weight reduction achieved. All patients were advised to drink liberally of

water to avoid dehydration. The therapeutic symptoms produced were those of increased heat production, such as a sensation of warmth, increased perspiration, dyspnea on exertion in some cases, and a variable effect on the appetite and vitality.

Table 1—EFFECT OF DINITROPHENOL ON BASAL METABOLISM

Dose, Gm.	Number of Determinations	Average Metabolic Rate, per cent	Range per cent
Control	37	+	27 to + 19
0.1	1	+	13
0.2	10	+	20
0.3	16	+	31
0.4	16	+	50
0.5	8	+	56
			7 to + 107

Table 2—RATIO BETWEEN DOSAGE AND WEIGHT

Dose, Gm.	No. Patients	Total No. Days	Average Days per Patient	Total Pounds Lost	Average Pounds lost per Patient Weekly
0.1	37	516	14	69	0.94
0.2	145	3,503	24	637	1.28
0.3	154	4,718	31	894	1.33
0.35	10	739	74	166	1.59
0.4	95	3,765	40	697	1.30
0.5	34	1,417	42	237	1.17
0.6	10	472	47	149	2.21
0.7	1	16	16	7	3.08
0.8	1	7	7	3	3.00

Toxic symptoms did not occur in patients taking less than 300 mgms daily. The symptoms were from increased capillary permeability with escape of fluid into the tissues and consisted of maculopapular rashes, urticarial wheals, and extensive localized edema. The patients experienced intense burning, weakness, syncope, and prostration. From such patients the drug was immediately withdrawn and bed rest and forced fluids were prescribed. Hypodermics of epinephrine gave some relief.

Explanation of Tables 1-5 (Tainter, et al¹): The effect of dinitrophenol on the basal metabolic rate as shown in table 1, was a marked increase in direct proportion to the dose. Table 2 shows the ratio between dosage and weight loss, which is also in direct proportion. Table 3 reveals that previous treatment by other means did not influence the rate of response to dinitrophenol. In tables 4 and 5 complete blood studies are recorded showing no alteration of the red blood cells or leucocytes. In conclusion the authors recommended dinitrophenol for the treatment of obesity where dietary measures and thyroid therapy were unsuccessful.

Subsequent to this Koch, Lee, and Tainter² reported **experimental studies** on the affect of dinitrophenol on liver function. Three dogs were treated with one control. All were fed unlimited diet, and the treated dogs lost weight continuously. The drug was administered in increasing doses of from 10 to 40 mgms. per kilo of body weight, for 6 months. Weekly liver function tests with rose bengal showed no evidence of liver damage, and the dogs eventually died from prostration, by hyperpyrexia and hyperoxygenation. Complete necropsy and histological studies revealed no alterations in liver or other body tissue.

Whereas Tainter, Cutting and Stockton reported their studies as final, from the ophthalmologists standpoint it was just the beginning, and practically simultaneously with that publication reports began to appear from various parts of the country regarding the cataracts in patients who had been using dinitrophenol.

Horner⁴, Boardman³, Cogan⁵, Lazar⁶, Kniskern⁷, and Allen⁸, in July and September, published cases of cataract occurring coincident with the use of dinitrophenol as a reducing medicine. Since that time a number of authors in different medical publications have recorded their observations on cataracts in patients who had been using this drug. The largest series is that published in the California and Western Medicine, April, 1936, by Rodin of San Francisco of 32 cases gathered from colleagues in his vicinity.

These cataracts have new and peculiar characteristics which may well define them as a distinctly new clinical entity. They resemble somewhat, cataracts complicata, which is characterized by posterior cortical opacities, and in rapidity of development to traumatic cataract with direct injury to the lens. Their delayed appearance corresponds somewhat to the delayed appearance of lens changes subsequent to blunt injuries of the eye.

Beginning Visual Symptoms: Clinically the patients complained first of slight impairment of vision, which in some instances was improved by a change in glasses, the change being generally indicative of an increase in the refractive index of the lens of the eye. After the first signs of impaired vision there was a

rapid development to complete blindness except for light perception.

Analysis of Cases: With only one exception the reported cases have been women, ranging in age from 25 to 67 years. Three-fourths of the cases reported have been between the ages of 25 and 45. Duration of the reducing treatment varied from 1 to 24 months, the average being 10 months. In some instances the drug was discontinued because of the appearance of cataract, but in fully half the cases lens changes appeared from 1 to 13 months after discontinuing the drug, the average of this group being 4 months. In most instances these patients were relatively obese and lost considerable weight as a result of their treatments, but in a few instances they were women of practically normal weight who desired to lose only a few pounds. Therefore these cataracts occur without regard to the amount of drug taken, weight lost, or discontinuance of the dinitrophenol.

Spaeth⁹ of Philadelphia reported a **case associated with** clinical and laboratory signs of **parathyroid tetany**, and in his case complete liquifaction excepting a small crenated nucleus had occurred. It was his opinion that had sufficient time elapsed complete absorption of this liquified cataract might have ensued.

Horner makes reference to the biproduct of dinitrophenol called dinitronaphthol which may be contained as an impurity of the drug and may be a factor in the production of the cataracts after the manner of development of naphthol cataracts.

All authors have reported similar **changes in the lens structure**. A study of the cataracts with the biomicroscope reveals certain characteristic changes. The cornea is usually clear but may be steamy if the intraocular tension is lightly elevated. The aqueous humor shows an increased flare. The anterior capsule of the lens is at first spotty, dry, and lusterless; later irregular pearl-grey opacities appear in the deeper layers of the cortex. Concurrent with the early changes in the anterior portion of the lens, a polychromatic luster can be seen in the zone of specular reflexion in the posterior cortex. These alterations are followed by a marked swelling of the lens and the embryonic suture lines seem to be completely

shattered by dark spaces resembling fluid clefts. If the condition is seen later than this there is almost complete disintegration of the lens and nucleus, the extent of which can be ascertained with a fair degree of accuracy by careful slit lamp study. The age of the individual determines the extent of these changes to some degree, particularly with regard to the amount of nuclear change. The vitreous structure appears to be normal in all cases, both during the early stages of the development of the cataract when the vitreous can be seen and also after cataract extraction.

The alterations described are believed to be due to damage of the capsule of the lens affecting its permeability. This effect when once established seems to be permanent and the balance of the change appears to be due to hydrolysis rather than chemical precipitation of lens substance.

Accompanying this marked swelling of the lens there is naturally an increase in intra-ocular pressure which varies from a few points above normal to **acute glaucoma**. In all instances the anterior chamber is very shallow.

These cataracts are amenable to **surgical treatment**, and the visual results are good. With complete disintegration of the lens fibers in most instances, the method of linear extraction has proved to be the best procedure, and I have performed it in patients up to 50 years of age. It may be necessary to make a different approach in some individuals past 45 years of age where nuclear sclerosis is present. Horner advises a small corneal incision with a conjunctival flap which can be enlarged if necessary to deliver a sclerosed nucleus. It is my opinion however that where there is marked swelling of the lens nuclear swelling can also be noted with the slit lamp and the operative procedure anticipated. A broad keratome incision followed by removal of a large piece of anterior capsule with forceps enables one to wash out the fragments of lens without difficulty. In most instances it is possible to obtain a round pupil, as the patients are relatively young and the pupillary sphincter tone is good. This is of distinct advantage from a visual standpoint and particularly as the patients usually are young.

TABLE 3—INFLUENCE OF PREVIOUS TREATMENT ON THE RESPONSE TO DINITROPHENOL

Previous Treatment	No. Cases	Average Daily Dose Dinitrophenol Gm.	Average Days Used	Average Lbs. Lost per Week
No diet or thyroid	99	0.32	82	1.45
Only thyroid	17	0.33	89	1.47
Only diet	26	0.35	91	1.55
Diet and thyroid together	28	0.33	111	1.02

TABLE 4—EFFECT OF DINITROPHENOL ON RED AND WHITE BLOOD CELLS

	Before		During		After	
	Av.	Range	Av.	Range	Av.	Range
RBC (Millions)	5.0	(4.3-5.7)	5.1	(3.8-6.1)	4.7	(3.7-5.4)
Hb (per cent)	91	(78-93)	88	(72-97)	93	(75-106)
WBC (Thousands)	7.3	(4.7-10.5)	8.5	(4.1-15.9)	7.3	(5.4-8.8)
PMN (per cent)	54	(43-59)	58	(36-90)	65	(60-72)
SL (per cent)	38	(25-48)	35	(7-61)	31	(26-35)
LM (per cent)	5.6	(2-11)	4.3	(0-11)	2.0	(2-4)
T (per cent)	0.6	(0-3)	0.6	(0-3)	0	(0-0)
E (per cent)	2.1	(0-4)	1.9	(0-8)	1.3	(0-2)
B (per cent)	0.3	(0-1)	0-3	(0-3)	0.3	(0-1)

TABLE 5—RELATION TOTAL DINITROPHENOL DOSAGE TO WHITE CELL COUNTS

Total Amount Taken, Gm.	WBC Thousands	PMN Per Cent	SL Per Cent	LM Per Cent
None	7.3	54	38	5.6
0.1-30	7.9	58	34	4.9
30.1-60	8.9	58	37	3.4
60.1-90	8.2	56	36	4.1
90.1-198	8.9	56	37	3.2

TABLE 6—DR. RODIN'S SERIES—32 CASES—ALL FEMALES

Age	Months Treat.	Daily Dose Mgm.	Weight—lbs. Before After Loss	Onset after Beg. drug (Mos.)	Onset after Disc. drug (Mos.)	Maturity
37	11			15	4	
65	17			19	2	
50	19			18	0	
37	9			16	7	
30	3			12	9	
44	7			11	4	
45	5			17	12	
56	7			18	11	
36	5			12	7	
38	6			6	0	
38	6			9	3	
43	14			14	0	
63	18			16	0	
44	6			11	5	
39	24			24	0	
41	4			14	10	
43	10			10	0	
53	18			23	5	
42	19			26	7	
45	7			13	6	
54	12			13	1	
60	18			18	0	
32	6			14	8	
33	12			6	0	
35	8			18	10	
36	4			12	8	
37	16			24	8	
46	12					
32	13					
54						
67						
Average:						
45	11 (29 patients)			7 (18 patients)		
45	11 (29 patients)			15 (27 patients)	7 (18 patients)	

TABLE 7—TABULATION OF CASES

	Sex	Age	Treat. Mos.	Daily Dose Mgm	Weights-lbs.		Weight Loss	Mos. after beg. drug	Onset after disc. drug (Mos.)	Maturity
					Before	After Loss				
1 ³	F.	50	18	100- 500	237½	161	76½	18		7 days
2 ³	F.	36	11	500	217½	165	52½	11		1 mo. O. D.
3 ³	F.	39	7 inter. 9 irreg.	100- 500	Some reduction			9		
4 ¹	F.	40	several	200- 500			32			Rapidly developing complete
5 ³	M.	38	4	300			60	3	2	3 wks.
6 ³	F.	25	1	300				6		6 mos.
7 ³	F.	44	12	300					3	
8 ³	F.	42	several							
9 ⁷	F.	37	14	300- 600-200	300	283	15	14		2 mos.
10 ⁸	F.	38	6	400	228	196	32	15		5 mos.
11	F.	39	5	65- 200	193	168	25	2		3 mos.
12	F.	44	inter. 12	100- 400	205	164	41	6		3 mos.
13	F.	30	9			160		5		4 mos.
14	F.	42	5				25	5		1 mo.
15	F.	32	3	300	250	210	40	3		6 wks.
16	F.	45	3	300	170					(Acute Glaucoma)
17	F.	41	3	400	175	140	40	3		3-4 mos.
18	F.	48	8					8		4 mos.
19	F.	44	6			145	30	3		
20	F.	28						4		Immature (6 wks.)
21	F.	48	6		190			18		
22	F.	27	3		150	160	30	8	2	3 mos.
23	F.	55	6			138	12	8	5	8 wks. O.D.
24	F.	25	9							6 wks. O.S.
25	F.	47	2	200			50	6		
26	F.	46	19	300	210		70	9		
27	F.	38	14		198		35	12	10	(Acute Glaucoma)
28	F.	52	6	100- 400	260	200	10	18		1 mo.
29	F.	35	18	300		146½	51½	14		
30	F.	34	18		195	213	47	12	6	5 mos.
31	F.	48	4	300	137		35	12		2½ mos.
32 ⁹	F.	37	11	200	197	166	29	12		3 mos.
33 ¹⁰	F.	46	5	350		122	15	17	13	10 days O.D.
34 ¹⁰	F.	45	1					15	10	2 wks. O.S.
35 ¹¹	F.	33	15	300	217			10	9	6 wks.
36 ¹¹	F.	27	12			170	47	15		6 wks.
37 ¹²	F.	27	18	250- 500	230			12		6 wks.
38	F.	44	20	300		185	45	19	1	3 wks.
39	F.	58	3	300			60	15		5 mos.
40	F.	57	6	300	240	200	40	7	4	3 wks.
								16	10	1 mo. O.D. 2 mos. O.S.

CONCLUSIONS

1. In justice to Tainter and his co-workers, it must be conceded that they gave adequate experimental and clinical trial to dinitrophenol before recommending it.

2. This report comprises about 100 cases occurring in California, although the statistics on about 20 cases are not in my tables, but are cases which have been communicated to me personally from physicians who were not able to furnish all the data.

3. These cataracts form a new and distinct clinical entity as evidenced by the rapidity of development, the marked swelling of the lens, its bilateral occurrence, and its incidence in an age group where cataracts are not ordinarily expected.

4. It is a coincidence that all but one of

these cases have been women and all relatively obese, except several who took the drug merely to lose a few pounds.

5. It is most disconcerting that cataracts develop many months after the drug has been discontinued—several on record being 12 months.

6. It is my opinion that from a surgical standpoint the majority of these cases are best operated by the method of linear extraction, leaving a round pupil.

7. With the exception of 1 or 2 instances all operative cases reported and in my own experience have had excellent visual results and there has been no damage observed to the other structures of the eye.

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Proprietary products containing dinitrophenol are:

Redusols, tabolin, Rx. No. 17, aldinal, re-du, dinitrose, formula 281, dinitriso, dinitrolac, slim, nitra-phen, noxbenol, formula 761, dinitrenal, dinitrophen, dinitra and nitromet.

DISCUSSION

Dr. D. F. Harbridge: The first cases in this country to attract our attention were those occurring in the San Francisco Bay region. The British Journal, within the year, has made some reference to the matter. The cataracts prevail with no instances of frank glaucoma. Last January or February, I thought I had two cases. Both cases admitted the use of the drug. I found the nucleus of the lens quite clear with the tension practically normal.

Dr. Cordess: I shall add only a few words. Dr. Whalman has been most thorough in his presentation. Patients, upon learning of cataract, still dislike giving up the drug. They state they feel better under the use of the drug and seem to dislike associating its use with the cataract. In reply to Dr. Harbridge, I have had one patient with typical bilateral glaucoma. After the operation no further trouble was experienced.

Dr. Hosford: In California it is still possible to purchase dinitrophenol. I thought it was to be ruled out state wide. I would earnestly suggest that men in the Public Health service take measures to see that the thing is stopped. The number of damage suits pending over its use in San Francisco is appalling. Many take the drug against the advice of their physicians.

Dr. Whalman: I have seen 3 definite cases of glaucoma. In this type of cataract, many take 6 months to mature. I predict that the 2 cases mentioned by Dr. Harbridge will go on to maturity. With patients loathe to give up the use of the drug, its sale should be stopped.

LABORATORY AIDS IN DIAGNOSIS OF ENTERIC INFECTIONS

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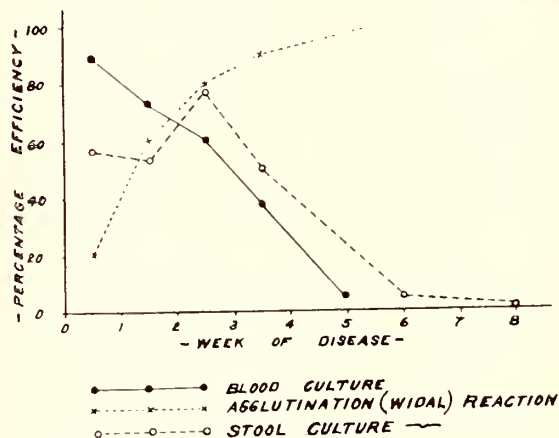
(Read at the meeting of the New Mexico Public Health Association at Carlsbad, May 7, 1936.)

From June to early October, we spend about three-fourths of our time on problems connect-

ed with the enteric diseases. I assume that the health officers spend a goodly part of their time in those months on similar problems. These facts justify our considering the enteric diseases particularly as they demand close cooperation between the health officers and the laboratory.

The assistance the laboratory can give is aid in diagnosis, release of quarantine and search for carriers. As an aid to diagnosis of typhoid fever we offer the blood culture, Widal reaction and under certain conditions examination of stool specimens. The blood culture is decidedly the method of choice during the early

~LABORATORY TESTS FOR TYPHOID FEVER~ ~Efficiency at Different Stages of the Disease~



part of the infection. The graph showing the time of the development of agglutinins in the blood is made from data gathered from macroscopic agglutinations since it only gives dependable results. We use both formalin killed and alcohol killed antigens. These antigens give the H and O agglutinins respectively. Inoculation with typhoid vaccine induces both H and O agglutinins; but the former are usually present in much higher titer. The O agglutinins decrease much more rapidly than do the H agglutinins. In typhoid infection, the O agglutinins appear earlier than do the H and most patients develop the O or somatic agglutinin in a much higher titer. The O agglutinins decrease more rapidly than the H during convalescence. H agglutinins indicate that the individual has had typhoid infection

or vaccination. O or O and H agglutinins in 1/80 dilution or more indicate a typhoid or infection with a closely allied organism. An increase in the titer of the O agglutinin is highly significant. For this reason more than one Widal should be done. From a wet blood specimen for a Widal, the clot is cultured; if the infection is typhoid or paratyphoid the offending organism may be isolated.

Examination of stool specimens may aid the diagnosis of typhoid or paratyphoid and is the only method to be used to release quarantine or to search for carriers. Isolation and identification of pathogenic organisms from stools are the most difficult problems which confront a laboratory, and can only be accomplished by the closest cooperation between the laboratory and the epidemiologist. Leon C. Havens wrote:

"The necessity for trained personnel in the field cannot be too strongly emphasized. It is only when careful epidemiological investigations have preceded the collection of the specimen . . . that results of value have been obtained. When the field work has been left to untrained, uninterested persons, there is injudicious selection of specimens, they are almost invariably improperly collected, there is a delay in shipment to the laboratory, and the result is failure."

A break in the chain will almost surely give negative results and false assurance.

If stool specimens could be examined within an hour after being passed, much difficulty would be eliminated. This is an impossibility; therefore, the original condition of the specimen should be preserved. The pathogenic organism, if present, must be kept viable and growth of saprophytic organisms must be inhibited. The difficulties are both universal and specific — specific because of differences of climates geographic locations aid field personnel. For some time we used a 30% glycerin, isotonic salt and brilliant green solution in bottles in which to ship stool specimens. A 30% glycerin in isotonic salt solution, and 0.5% lithium chloride, buffered with potassium and sodium phosphate to hold at a pH of 7.5 is now being used. This is an attempt to decrease the growth of normal fecal organisms and the resulting acidity which kills the bacterium typhosum and bacterium dysenteriae. Bacterium dysenteriae is extremely sensitive to acid.

New Mexico has a problem of dysentery and summer diarrhea. We speak of the disease produced by the bacilli first identified by,

Shiga in 1898 in Japan, Flexner in 1900 in the Philippines and Kruse in 1900 in Germany, as bacillary dysentery or summer diarrhea. Its prevalence is determined by a number of factors, among which are general sanitation, nourishment of the population, housing conditions, and prevailing temperature. Fly prevalence and disposal of human excreta seem highly important. When the general public realizes that much of so-called summer diarrhea is an infectious disease spread in the manner that typhoid fever is spread, and not simply an intestinal disturbance caused by eating green apples, etc., we shall have gone a long way in its control. Dysentery is distinctly seasonal, and definitely related to fly incidence. Many interesting experiments definitely prove that flies carry the bacilli of bacillary dysentery.

The "dysentery bacillus" embraces many types differing greatly in pathogenicity. Confusion exists in the terminology. However, they may be roughly grouped into mannite and non-mannite fermenters. Among the non-mannite fermenters, the most important is the bacterium Shigae. It produces a definite toxin for which an antitoxin may be developed. In man it localizes chiefly in the large intestine. The organisms are not in the blood stream, but agglutinins appear after the disease is well developed. The bacillus enters the body by means of infected food and contaminated hands. The first symptoms may develop in 12 hours.

Among the mannite fermenters are bacterium flexni, including a number of different races termed in America, Flexner, Hiss Y. Strong, Russell, and in England V, W, X, Y, and Z. These races cannot be separated culturally and only in part by agglutination reactions. However, they do contain somatic antigens in different proportions and can be separated by absorption tests together with the agglutination tests. In addition we have Sonne's bacillus which ferments lactose slowly and is sometimes associated with dysentery, especially in children. This is not true in England, but several epidemics by this organism have been reported in the eastern states. The disease produced by the mannite fermenters is, on the whole, less acute than that produced by bacterium shigae. However, the identification of the organism from the stool is the only true way to determine the type of infection. Since

it is primarily important to know if a given individual or a group of individuals is infected with a mannite or non-mannite fermenter, it will be the policy of the State Laboratory to report positive cases as Shiga, Flexner, or Sonne. This gives the needed information as soon as possible; the races involved is worked out as time permits.

Both Shiga and Flexner infections have occurred in a single outbreak. In the United States the Flexner type of infection is the more frequent. Only Flexner organisms have been isolated in this state. However, there is evidence that Shiga infections have prevailed in certain parts. During the fall of 1934, we ran agglutination tests on sera from healthy Pueblo Indian children by the macro technic with four formalin killed antigens from bact. shigae, flexneri, Hiss and Sonne. Of the 526 sera 67% gave agglutination in a dilution 1/80 or above with shiga antigen, 15% with Flexner and Hiss, and 12% with Sonne. The agglutination with the Flexner and Sonne antigens means very little, except in high dilutions. However, the agglutinations of the Shiga antigen can not be ignored as Topley, Wilson, Carter, Dudgeon, Tenbroek, and Havens say that an agglutination of a Shiga antigen in a dilution of 1/40 to 1/64 indicates that the individual has or has recently had an infection

from bact. shigae. Sera from some of these cases were sent to the National Institute of Health, Army and Navy Hospital, and Johns Hopkins for a check, and in every instance upheld our results; and in some sera reactions were reported in even higher dilutions than we had reported. The agglutinins for Shiga usually remains in the sera not more than a few months. The sera from 39 of these children were retested after they had been living approximately 6 months in the good sanitary conditions of the Indian School. While in the fall of 1934 all the sera agglutinated the Shiga antigen in a dilution of 1/320 or higher, in May of 1935 only 5 reacted, 2 in a dilution of 1/80 and 3 in a dilution of 1/160. Twenty-nine of these children again were retested 14 months after the first test and only 1 serum reacted and that in a dilution of 1/320. During the school year the child had been well, but we do not know its history during the summer of 1935. Undoubtedly these children had had illness during the summer of 1934 which produced immune bodies in their blood sera which agglutinated the Shiga antigen in high dilutions. Since the only way to prove a bacillary dysentery infection is to isolate the organisms, we cannot state that these children had Shiga infections during this time, but the statements of the scientists just quoted indicate that they might have had. We ran 21 agglutination tests during the fall of 1935 and found only one reaction in 1/80 with the Shiga antigen. This suggests that dysentery infection of the Shiga type might not have been as prevalent in 1935 as in 1934. The physicians of the Indian Service have told me that they had much less summer diarrhea among the children during 1935 than during 1934.

The evidence of a possible Shiga infection in the state would seem to be of enough interest to warrant our combined efforts to prove or disprove it. It is of scientific interest to determine definitely the type of bacillary infection prevalent, whether mixed or purely Flexner⁷; if Shiga infection exists, it should be known as treatment with Shiga immune sera reduces the mortality to about one-third. Since the Flexner bacilli do not produce the extra-cellular toxin, its immune sera is not so effective. It has been shown that prophylactic vaccination with killed cultures reduces the

TABLE I—SUMMER DIARRHOEA

	Case Studies	No. Cases with Dysentery Bacilli	Per Cent Bact. Shigae	Bact. Flexner Per cent	Per cent Shigae and Flexner
Flexner 1902-3	412	285	8.1	89.8	2.1
Tenbroeck 1915-16	154	105	0	68.0	0
Rockfeller Institute Boston					
Davison 1919			23.0	46.0	0
Birmingham					
Dudgeon 1919		874	38.3	57.3	0
Salonica. Exped.					

TABLE II—(TOPLY AND WILSON 1929, PRINCIPLES OF BACTERIOLOGY AND IMMUNITY 1022)
Showing Proportion of Recoveries of Dysentery Bacilli from Different Types of Feces (1919)
Total Number of Cases Examined 3,125

	Blood and Mucus		Diarrhoetic Stools and Mucus		Diarrhoetic Stools	
Number Examined	1,103		741		1,281	
Positive	644 or 60.2%	160 or 21.6%	50 or 3.9%			
Negative	439 or 39.8%	581 or 78.4%	1,231 or 96.1%			

incidence of dysentery. Intramuscular vaccination with Shiga strains produces severe reactions from the toxin. It is necessary to use mixed strains as immunization against one does not protect against another. The immunizations last only a few months. Besredka in 1922, and others later, have used an oral vaccine of all strains and demonstrated a degree of protection. Use of oral vaccine almost eliminates the disagreeable reactions accompanying other vaccines.

What can we as a health unit do to determine the type of dysentery infection prevalent in the state? The macroscopic and microscopic appearance of bacillary stool specimen is characteristic, and the field representatives should familiarize themselves with it.

"During the next 24 hours the evacuation consists of bright red blood, semi-opaque mucus and a clear fluid. Microscopically there are a large number of red cells, abundance of pus cells which may be clumped, epithelial and endothelial cells. From the 2nd to the 4th day the stools consist of semi-opaque mucus, little blood and opaque fluid. Bright red blood is no longer a predominant feature: the fluid now becomes opaque and microscopically, it consists almost entirely of pus cells. About the 5th day in a severe case little or no blood is to be seen macroscopically and the mucus appears purulent. Microscopically about 90 per cent of the cells are pus cells; the remaining 10 per cent consist of a few red cells, lymphocytes, endothelial, epithelial and plasma cells. At this period, coagulation necrosis and ulceration of the mucosa are taking place. Quite often at this state or a little earlier one encounters blood and clear mucus in the evacuations, which indicates a bacillary dysentery of one day's duration, due to extension of the disease to a fresh area. After the fifth day, depending upon the severity of the case, fecal matter reappears in the stool. "Tags of mucus" which may be present at this period or later, consist of degenerated pus cells, endothelial and epithelial cells. In the fecal portion of the stool pus cells occur singly or in small groups of three or four."

That portion of the stool carrying the greatest number of dysentery organisms is the mucus and pus. Recovery of dysentery bacilli can best be made when the mucus is most prevalent; 60.2% of the recoveries were from stools with both blood and mucus, 21.6% from stools showing mucus but not blood, and only 3.9% from diarrheic stools that had neither blood nor mucus.

The collection of specimens and their examination by the laboratory is expensive in money and time. Therefore, it seems best to collect and examine for diagnosis only specimens that have some probability of yielding results. Specimens collected more than 4 or 5 days after the onset of the disease will yield poor re-

sults for 3 reasons: the number of dysentery bacilli is materially decreased at this time; the amount of fecal material definitely increased, thus encouraging overgrowths by other organisms; and the bacteriophage of d'Herelle is increased, tending to lyse the specific organism. Unless a specimen can be collected at the proper time, with the macroscopic appearance of a stool of bacillary dysentery, it would seem best not to send it, saving time and money and avoiding the assurance of false negatives. This also eliminates stools from individuals suffering from intestinal disturbances due to food.

We have tried sending plates to the field to be inoculated. We have had rather indifferent results. Some of the difficulties are dried plates, overgrowths with molds, broken plates, and lack of early incubation. Dysentery bacilli grow best and show most characteristic growths at body temperature. The 1 to 2 day incubation at room temperature in transit to the laboratory allows overgrowths by organisms more adapted to grow at room temperature, and produces atypical growths by the dysentery bacilli.

We solicit your cooperation in the dysentery problem, and hope that together we may develop methods so that stool specimens may reach the laboratory and yield results comparable to those obtained by direct culturing in the field.

MEDICAL ANNALS OF ARIZONA

HEALTH AMONG THE NAVAJOS

SIDNEY J. TILLIM

Continued from September Number

In the N. Y. Times of May 7, 1935, is a news item entitled: "Physician Praises Indian Tribe Cures." It is a report of an address by Dr. Harlow Brooks of New York, delivered at the 11th annual meeting of the American Association of the History of Medicine. He believes he is one of the first white physicians to be allowed to witness a "sing" among the Navajos. About this he is probably mistaken. Almost anyone proving himself a friend can obtain the privilege, if he desires it. A handsome contribution in tobacco, coffee, or money the day before the last nightly ceremony, will in-

sure a welcome. Dr. Brooks' observations are interesting; he says the medicine men are intelligent and do much good and cites an instance he witnessed of an Indian pronounced critically ill by white physicians, who improved after the ceremony. Such experiences are often recounted by educated Indians' defending their return to primitive beliefs and practices and Indian traders (white men) often speak of such instances. These are actual happenings. The reasons are clear. Until recently the grade of physicians in the Indian Service was perhaps the lowest in public employment; they too often were men of bad habits, professionally and intellectually lazy, without interest in or desire to adjust themselves to the problems before them. Many of these stayed only a short time and were dismissed for misconduct or nonfeasance. Conditions of work and the pay attracted few good men until the present economic depression. Failure to recognize the mental factor in syndromes of disease undoubtedly explains the apparent incorrect prognoses by the physicians, and the success of the medicine men. Dr. Brooks gives the key to the riddle when he states that the inspiration and enthusiasm of the ceremony had a stimulating effect on the patient's mind and body. However, when the doctor speaks of his experience as "an enviable lesson for all of us who consider ourselves civilized," he may have been carried away by the "inspiration and enthusiasm" of the ceremony. Having witnessed the last night (the big night) of their Fire Dance in its every detail, I consider it picturesque and dramatic, but hardly a lesson for civilization. A descriptive account of this, one of the most important, healing ceremonies would be interesting but outside the scope of this paper.

To offset the glowing impression of the visitor to the Navajo country, a few personal experiences seem pertinent. The medicine man's work is not always limited to song and the giving of healing potions; it depends on the type of patient. When called to assist a woman in labor, they render active assistance, a service that is gruesome to behold, barbaric in character. A case is recalled of a young woman in labor with her first baby. A messenger came to the hospital asking for a doctor to go out immediately as the patient was exhausted

from more than two days labor and about to die. Such a call usually meant the doctor would find the patient dead when he got there. Fortunately for the woman, she could still hang on to the cloth from which she suspended herself, to bear down with each pain. It was a sight never to be forgotten—a moaning, groaning young female, uncovered to the waist the face and exposed part of the body grimy from a mixture of soot and perspiration. Two medicine men waited on her; one stood in front of her chanting prayer at the same time fanning her with a handful of eagle feathers; the other sat behind her his shirt-sleeves rolled up showing long sinewy arms. With each pain the patient arose as if in a last effort from her squatting position, to reach for the cloth above her head, and the man behind her encircled her abdomen to pull towards him with all his might until the pain was over. Then both relaxed to wait for the next pain. In fairness to the medicine men, they had no idea of the cause of delay, since medicine men do not examine women patients. In this case the trouble was found to be an arm presentation, with the presenting part already well outside the canal. The fetus was already dead and the mother would surely have died in labor. She was brought to the hospital and delivered of the dead fetus, and she was making an uneventful recovery when she eloped from the hospital after one week's stay. The case in which an hydramnios and monstrosity was found has already been mentioned.

An instance of another kind: Two young girls were out herding sheep one afternoon when an electrical storm broke and they were both struck down by a bolt of lightning. Word of the accident soon reached the parents, but neither they, nor any other Indian, would come near the two children until a medicine man had seen them. Only a few medicine men know how to bring back life to a person struck by lightning and such a man could not be reached until the following day. Word of the accident did not reach the hospital until Mrs. Snake-Sausage, the mother, made her appearance on the grounds the next morning, trying to get help in finding a medicine man. She absolutely refused to allow the doctor, or any other white man, to come near or see the victims. To resist her would have meant a fight

and would have done no good, since the victims were undoubtedly dead by then; if not killed by the lightning, they were drowned by the flood of the waters from the rain. When finally seen, more than 24 hours after the accident, their ears and mouths were filled with debris, and their clothes showed that they must have moved after they were struck down, as their dresses were torn as if by sliding on the ground and against brush.

The medicine men have, and will continue to have, a place in the care of the sick Navajo as long as the white physicians cannot supply a substitute for the inspiration and fervor of the "sing." They are a detriment and a necessity; their field of activity can be, and should be, reduced by providing the Indians with intelligent, sympathetic and honest physicians.

The Missions have a part in the care of the sick Navajo. With rare exception, the missionaries apparently are kind and helpful to the needy Indian, even to donations of necessities from their own meager salaries which do not include Thanksgiving and Christmas dinners, or the coffee and doughnuts for church attendance. The Indians are grateful to the missionary who will bury their relatives that die in the hogan, but do not look with favor upon the regimentation of their school children for religious training. They resent the unfair advantage over the young minds, creating doubt in and disrespect for the beliefs of their ancestors. They see only harm from this; when the child returns to the tribe he is spoiled; he is not a Christian, but a heretic to his own faith. The Missions maintain two modern hospitals with a total bed capacity of over one hundred. They are better equipped and better managed than most of the Federal hospitals and Indians often express preference for these institutions. Where the Indian Service physician shows a friendly, cooperative attitude, the missionary does everything possible to spread his popularity; they will not support a man who does not show himself a friend of the Indian. The local missionary and I made many emergency calls in the former's car, when the government's car was broken down; he called me to many cases which might otherwise have gone unattended. As far as their activities relate to health, the Ganada Mission Hospital is practicing a more sensible

attitude towards the sick Indian than are the Federal hospitals. Instead of practically begging the Indian to accept their service gratis, they make a very nominal charge for what they dispense, unless the Indian is penniless. It is understood that their school follows the same practice with gratifying results, without loss of patronage. They are giving the Indians a sense of self-respect and teaching them the old rule that what you buy is worth having.

The Federal government provides nine hospitals on the reservation, with about 400 beds, of which 75 are for tuberculous patients. There are 14 physicians connected with these hospitals, and two trachoma specialists who give part of their time to the Navajo. There is a Navajo-Hopi tuberculosis sanatorium at Winslow, Arizona, 45 beds served by one physician, and one physician who serves the non-reservation Indians about Gallup, New Mexico. In addition, there are the Indian School Hospital, and a large tuberculosis sanitarium at Albuquerque, New Mexico, which receive Navajo patients. These figures include the medical personnel and hospital for the Hopi reservation.

The ratio of physicians to population on the reservation is approximately 1:2600, or less than one-third the proportion found in a modern city. Actually the situation is more distressing than the figures indicate. The Navajo requires hospitalization oftener than people in white communities because of his unreliable home care. The area served by a physician is 30-40 miles in radius—in instances a great deal more. During winter and rainy seasons the roads are bad; a distance of 25-30 miles may require a whole day's travel. The lack of community grouping makes frequent trips necessary. These factors and the fact that physicians must deal with their patients through interpreters, result in great loss of time. In many instances the field hospitals are too small to care for the needs of the district, poorly equipped, badly planned, without provision for segregation of contagious or acutely ill patients. Some of the hospitals are old buildings or converted from old dormitories, with inadequate provisions for window space, sanitary facilities, or heating. It is my understanding that during the past two years there has been considerable progress towards improvement of the hospital situation.

The Indians are making increasing demands for hospital and medical care from year to year. This will continue as the service continues to improve. The younger, more energetic and more liberal men coming into the Service in late years, are showing results. In the period 1929-1933 the total annual number of patients in Indian Service hospitals throughout the country has grown from 37,511 to 50,376; the total hospital days have increased from 677,241 to 1,077,948; obstetrical cases in hospitals increased from 861 to 2,277. In January, 1932, I took charge of a 19 bed hospital in which were seven or eight patients, mostly children. From November, 1932, to June, 1933, this hospital had an average attendance of 22, with more than two-thirds non-school patients. This was not due to special gifts or wiles, but to merely the winning of confidence and a willingness to serve.

The medical work is supervised by a district medical director and the nursing staffs by a district supervisor of nurses. Both have headquarters at Albuquerque, New Mexico, and make periodic inspection trips to the several hospitals about every three to four months, or less, depending on road and weather conditions. They come; look around; and leave to make a report to Washington.

The medical work consists of three distinct types of services: the hospitalized cases; the hospital clinic; field dispensing. It is a well established practice to admit for hospitalization any Indian running a temperature and willing to accept treatment. The diagnostic facilities in the hospitals are most inadequate; only two hospitals have x-ray machines. The smaller hospitals have only makeshift provisions for routine blood and urine examination. At times during the school year the hospitals are so overcrowded as to require placing more than one patient in a bed. The Indians' mode of living and lack of intelligence in things medical, make it necessary to hospitalize more often than in a civilized community since home care is a risky undertaking. The hospital clinic is, in reality, a dispensary. Many come for simple remedies for relatives at home. On quizzing the messenger about the illness it is often found advisable to ask for permission to see the patient before prescribing, and it usually ends by taking him to the hospital.

Many ask at the dispensary for various drugs for ailments diagnosed by themselves; a hang-over of an old practice of handing out bottles or tins of medicines on request. Now and then they come to have teeth extracted, (the physicians become quite expert as teeth extractors); a few come to be examined because they are uneasy about their health.

(Continued to November Number)

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.
Director New Mexico State Bureau
of Public Health

International public health for 40 years before the world war was represented by the International Congress of Hygiene and Demography. The last meeting of this body was held in Washington in 1912. After the war international hygienists outlined a heroic program of world hygiene at Cannes and brought into existence the League of Red Cross Societies in May, 1919. "Among the functions prescribed for the League were those of collecting and disseminating, as soon as available, all important information relating to public health and new methods for the prevention and control of outbreaks of infectious diseases and also of attempting to improve and standardize public health legislation and education throughout the world." Representing the United States on the medical advisory board were Dr. William H. Welch, Dr. Hermann M. Biggs and Dr. Simon Flexner. This venture was financed almost entirely by the American Red Cross which soon found that its war time budget would have to be curtailed in years of peace. Moreover, the unofficial status of the league handicapped it in dealing with national governments. Most of its functions have been taken over by the health section of the League of Nations, though the Red Cross organization still exists as a convenient international filing cabinet for various voluntary health organizations.

The health section² of the League of Nations has not been idle. Through its efforts international conference has been resumed in several forms, one of the most important being The International Congress of Microbiologists, founded in 1927, which has just held its second meeting at University College, London. The summary of its proceedings occupies nearly 400 pages. We may glance here only at a part of the work of the section on specific immunization under the presidency of our own dean of immunization against diphtheria. Plain toxoid (formol toxoid or F. T.) had its advocates including Professor Fitzgerald of Toronto and Professor Madsen of Copenhagen. The latter has obtained complete immunization in Denmark by one dose of F. T. followed in 4 weeks by the nasal instillation of a 2nd dose administered by the mother. On the whole, however, the superior antigenic value of alum precipitated toxoid (A.P.T.) was recognized. There was not agreement as to how many doses should be given. Two small doses are, it seems, more effective than one large dose, especially in rural communities where the original level of immunity is likely to be low. This impression from the conference in London is borne out by a recent American study³ in which, however, the authors have committed the current fallacy of comparing one dose of A. P. T. with three doses of F. T. There is no need to sacrifice the advantage of the more potent A. P. T. antigen in order to secure that of multiple dosage.

1. Introductory note: *Internat. Jour. Pub. Health.* 1: July, 1920.

2. For details of its numerous valuable publications write World Peace Foundation, 40 Mt. Vernon Street, Boston, Mass.

3. Pansing, H. H., and Shaffer, E. R.: Detailed Study on Diphtheria Immunization, *Am. Jour. Pub. Health.* 26:786, August, 1936.

THE ART OF MINISTERING TO THE SICK by Richard C. Cabot, M. D. and Russell L. Dicks, B. D.; The MacMillan Company; New York; 1936.

Dr. Cabot and the Rev. Dick would make the minister a contact man between the physician and the patient. They would have the minister be the one to make sure the patient understands the physician and that the physician has not neglected to ease the patient's mind about such things which to the physician are commonplace and may not even be thought of. In the event that a patient is a bit apprehensive about an operation or about any sort of treatment, the understanding minister can explain away the fears.

In many instances patients begin to lose confidence in their physicians, perhaps entirely because they are so preoccupied with the serious conditions confronting them that they do not have the time nor the thought to explain to the patients the necessary things to keep them satisfied and understanding. The minister who understands his task would see that the confidence in the physician is not shaken. Every physician knows that it is a bad policy for a patient to be running from one doctor to the next. A pastor who understands that when a patient changes doctors he is apt to lose what the physician has learned through weeks of study of him might do much good.

The purely religious side is not to be ignored. Some patients feel deeply on this phase of life. The authors, however, say: "The conception of the ministry as a life 'saving souls' by pulling them back from the brink before they plunge to their doom, involves beliefs which we do not hold . . . It is the minister's task, we hold, to go to the sufferer and to minister to the sufferer's needs as he finds them and not as he assumes them to be . . . All are formulated in an effort to meet the patient's religious needs rather than the minister's. 'Prayer must have application. It must recognize the facts in a given sickroom. It must recognize the sufferer's needs and express his thoughts about them. . . . Pray for 'a quiet mind, that we may know Thy will and Thy spirit within us,' would be more apt to prepare her mind's soil for a new plant of forgiveness—a plant which, when it blooms, will be the healthier for having been her own discovery."

This book presents a great deal which is worth consideration by both physicians and ministers. Were the plans of the book practice, the pastor would become not the assistant, but the co-worker with the physician, dealing with many of the patients' mental problems of which the physician may be ignorant or may not have the time to deal with.

THEORY AND PRACTICE OF PSYCHIATRY by William S. Sadler, M. D.; Chief Psychiatrist and Director, The Chicago Institute of Research and Diagnosis; Consulting Psychiatrist to Columbus Hospital; Fellow of the American Psychiatric Association; Member of the American Psychopathological Association; Author of "The Mind at Michief," "Piloting Modern Youth," "Worry and Nervousness," "Physiology of Faith and Fear,"

"The Quest for Happiness;" formerly Professor at the Post-Graduate School of Chicago; Fellow of the American Medical Association; Fellow of the American Association for the Advancement of Science; The C. V. Mosby Company, St. Louis; 1936; price \$10.00.

The book is written for the purpose of giving to the general practitioner and others the author's conception of the noninstitutional treatment of personality, nervous and emotional disorders along with various phases of the psychoses. The author had in mind in writing the text that it may be read by sociologists and psychologists and others more or less trained in human adjustment problems. Vast numbers of neurotic and emotional sufferers so often knock at the door of the physician in vain—generally falling into the hands of irregular practitioners, quack cultists, "divine healers," etc., and are probably not only not benefited but have their delinquencies increased.

This is a book of 1231 pages and is divided into five parts and 77 chapters with a glossary and an index. The first part deals with theory of psychiatry, second with personality problems, third with neuroses, fourth with psychoses, and the fifth with psychotherapeutics.

This would seem to be a book that practically every physician will wish to have in his library. There will be scarcely a day but which one problem at least might be answered by referring to its pages. The printers have done a huge task in a splendid way. The book is highly recommended.

SYNOPSIS OF DISEASES OF THE HEART AND ARTERIES by George R. Herrmann, M. D., Ph. D., Professor of Clinical Medicine, University of Texas, Member, Association of American Physicians, American Climatological and Clinical Association, American Society for Clinical Investigation, American Society for Experimental Pathology, and the Society for Experimental Biology and Medicine; Fellow, American Association for the Advancement of Science, American College of Physicians, and the American Heart Association; Miembro Correspondiente Extrajero De La Sociedad Mexicana De Cardiologia; The C. V. Mosby Company; St. Louis; 1936; price \$4.00.

This is a small volume which will fit the ordinary pocket and presents the essential facts, on the heart, of the ordinary text book. It is a handy useful volume for any physician and especially convenient because of its size and therefore highly practical.

DISABILITY EVALUATION: By Earl D. McBride, B.S., M.D., F.A.C.S., Assistant professor in Orthopedic Surgery, University of Oklahoma School of Medicine, Attending Orthopedic Surgeon to St. Anthony's Hospital, Associate Orthopedic Surgeon to Wesley Hospital, Visiting Surgeon to W. J. Bryan School for Crippled Children and Chief of Staff to Reconstruction Hospital, Oklahoma City, Okla.

Since the time that the states first assumed responsibility for compelling industry to give proper care and compensation for the injuries developing in industry, there has been an increasing need for standards by which to evaluate disability. Dr. McBride has made an extensive study of this and as far as he knows is the first to bring out a book dealing with the physiological and mechanical alterations arising out of injury to the motor structures of the human body, and to reasonably appraise and evaluate the extent of functional loss as it relates to the economic incapacity of the injured.

Surgeons, especially those who have to deal with injured men and women, should have access to this book. The publishers' art is excellently portrayed.

SOUTHWESTERN MEDICINE

Printed by THE A. C. TAYLOR PRINTING CO., Phoenix, Arizona
Published monthly for the Board of Managers of the four constituent societies.

VOL. XX.

OCTOBER, 1936

No. 10

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OUR "FALL" MEETING

We again call attention to the splendid treat in store November 19-21 in El Paso for the physicians who find it possible to attend this meeting. The program committee has been working ever since the last meeting to provide the most instructive practical program possible. They have done their work most commendably. If you did not read the editorial in the last month's *Southwestern Medicine*, please dig up the September issue and read it. Accept the challenge and attend this meeting. Go over the list of speakers and the program and see if you can afford to stay at home.

THE BLOOD PRESSURE RACKET

Fakers that set up along the sidewalks of populous resore districts with one scheme or another for filching money from the public usually have profitable business. The holiday crowd seems to be easy "pickings".

One of the latest schemes to be used is taking blood pressures. A man with a white coat, sthescope and blood pressure apparatus "ballyhoos" individuals into having their blood pressures taken and a small charge is made for each. The racket has been so profitable that a scheme has been proposed to supply blood-pressure apparatuses to large numbers of individuals on which they pay rent or commission or work on salaries.

The W. A. Baum Company, Inc. of New York City reports that they have been pestered to fill orders for large numbers of blood-pressure apparatuses for "bilking" the public. It is to the credit of this commercial company that it refused to fill these orders. They cannot prevent an occasional one's getting into the hands of fakers, but they can prevent large numbers,

getting into the hands of organized racketeers.

Gradually are commercial drug and apparatus houses beginning to display an appreciation of medical ethics and now and then to be guided by them in their own business affairs.

FIRST HARLOW BROOKS MEMORIAL NAVAJO CLINICAL CONFERENCE

This conference is to be an annual event at Sage Memorial Hospital at Ganado, Arizona. It is named in honor of Doctor Harlow Brooks, who was so intensely interested in the work of the Sage Memorial Hospital.

The outstanding feature of the meeting, which was largely attended by the doctors of Arizona and New Mexico, was a series of lectures by Fred H. Albee, illustrated by colored movies showing the latest advances in bone surgery. Doctor Albee also conducted two ward classes on orthopedic cases.

Those who attended the meeting were also greatly interested in the lectures and ward classes on gall bladder diseases, by Doctor Milo K. Tedstrom of Santa Ana, California. Doctor Tedstrom also gave a demonstration lecture on the use of the electrocardiograph.

Joseph Madison Greer, who flew up from Phoenix for the meeting, gave a lecture on the "Care of Crippled Children in Arizona". Doctor Greer will conduct an orthopedic clinic at Sage Memorial Hospital November 15 next.

George Albert Jenner of Milwaukee gave a lecture on "Newer Methods of Detection and Treatment of Syphilis and Gonorrhea." Doctor Jenner also gave a demonstration lecture on the use of the cystoscope.

W. W. Peter, Medical Director of the Navajo Area, lectured on "Recognition and Treatment of Contagious Diseases."

E. Forrest Boyd lectured on "The Diagnosis and Treatment of Arthritis".

The following moving pictures were shown: "Forcep Operation" by Joseph B. DeLee, "Mental Deficiencies Due to Birth Injuries" by Edgar A. Doll and "The Autopsy" by Julius Weingart.

The second conference will be held September 6, and 7, 1937.

A PROPOSED ROCKY MOUNTAIN MEDICAL CONFERENCE

At the 1936 annual session of the Colorado State Medical Association, a resolution was passed inviting the state medical associations of Wyoming, Utah, Montana New Mexico and Arizona to meet in 1937 at Denver with the Colorado State Medical Association for the purpose of discussing problems of mutual interest to the physicians of the Rocky Mountain states and to form an organization to meet periodically every two or three years.

The proposition has been discussed with the Utah State Medical Association and the New Mexico Medical Society and both have considered it favorably.

Those who are interested should read the discussion, of Colorado's fraternal delegate, Dr. Lingenfelter, found in another column.

The common problems to the physicians of the Rocky Mountain area as suggested by the Colorado Society are Rocky Mountain fever, the health seekers, the effect of altitude on diseases, and the high death rate from pneumonia. Other problems will be suggested when physicians have had time to consider such meetings and the good to be derived from them.

This matter will certainly be presented in the near future to the medical associations of Montana, Wyoming and Arizona and the physicians of these associations should be considering it.

We are inclined to think favorably of the idea and can see possibilities of much good coming out of such meetings.

Were it possible to transplant the chronically ill from the densely populated areas of the east and central United States to the sparsely settled districts of Colorado, Wyoming, Montana, Utah, New Mexico and Arizona great good would be done large numbers of the sick because of getting away from the germs of the

densely populated areas. This says nothing about the good that would be done the home folks by taking their sick ones with their germs away.

The sunshine of our states is a health factor, the value of which to the chronically sick can not be calculated. The people recognize this. Therefore they are coming to us in increasing numbers. When a man may purchase a used car for \$30.00 or a little more and can sleep temporarily in the open he can get to the "sunshine" states which offer him as well as the man with the Pierce Arrow or the Lincoln a chance for life. Who would be so hard-hearted as to tell the man with nearly no funds that he shall not have the advantages of our sunshine and our wide open spaces? But how shall he exist? Some members of the poor man's family may be able to work and hence come along, expecting to get work. If there are 10 men for every job and all ahead of the newcomers they may have to wait a long time to get a chance at a job. In the meantime, the family's scant savings are gone. They become charges upon the community or have to beg their way back home. At any rate harm has been done. The sick one may be already dead because of lack of necessities other than sunshine and open spaces.

There should be a way of helping the poor to have the advantages of our climate with the cost borne by home communities.

This is one of those problems that the Rocky Mountain Medical Conference might attempt to solve.

The American Board of Internal Medicine, Inc., completed its organization on June 15, 1936. The officers are Walter L. Bierring, Des Moines, chairman; Jonathan C. Meakins, Montreal, vice chairman; O. H. Perry Pepper, Philadelphia, secretary-treasurer. The other six members of the board are: David P. Barr, St. Louis, Reginald Fitz, Boston; Ernest E. Irons, Chicago; William Middleton, Madison; John H. Musser, New Orleans, and G. Gill Richards, Salt Lake City. The term of office is three years and no member can serve more than two consecutive three year terms.

The Board is sponsored by the American College of Physicians in conjunction with the Section on Practice of Medicine of the American Medical Association and these two organizations are represented in the membership of the Board on a five to four ratio.

The Board has received official approval of the two bodies fostering its organization as well as

that of the Advisory Board for Medical Specialties and the Council on Medical Education and Hospitals of the A.M.A.

The Purpose of this Board is to certify specialists in internal medicine, and to establish qualifications for examinations for such certification. At a later period, it proposes to give certification in specialized branches of internal medicine. The applicants for admission to examination in internal medicine will be required to meet certain standard qualifications, as follows:

General Qualifications: Satisfactory morals and ethics; membership in the American Medical Association or, by courtesy, such other organizations as may be recognized for this purpose.

Professional Standing: Graduation from a medical school of the United States or Canada recognized by the Council on Medical Education and Hospitals of the American Medical Association; completion of an internship of not less than one year in a hospital approved by the same council; if an applicant's hospital training has been received outside of the United States and Canada, his credentials must be satisfactory to the Advisory Board for Medical Specialties and the Council on Medical Education and Hospitals of the American Medical Association.

Special Training: Five years must elapse after completion of a year's internship in a hospital approved for interne training before a candidate is eligible for examination; three years must be devoted to special training in internal medicine including several months of graduate work under supervision in anatomy, physiology, bio-chemistry, pathology, bacteriology, or pharmacology, particularly as related to the practice of internal medicine; a period of not less than two years of special practice must be had in the field of internal medicine or in its more restricted and specialized branches; a sound knowledge of physiology, bio-chemistry, pharmacology, anatomy, bacteriology, and pathology, in so far as they apply to disease is regarded as of great importance; this may be done in clinics, hospitals, or in intimate association with a well-trained and critical physician.

Examinations will be in two parts, written and clinical. The written examination will be held in different sections of the United States and Canada simultaneously and will include questions in applied physiology, physiological chemistry, pathology, pharmacology, the cultural aspects of medicine, and in general internal medicine. The first written examination will be held in December of 1936, and the successful participants will be eligible for the first clinical examination which will be conducted by members of the Board near the time for the annual session of the American College of Physicians at St. Louis in April, 1937. The second practical examination will be held at Philadelphia near the time of the annual session of the A.M.A. in Atlantic City in June, 1937.

The fee for examination is \$40.00 which must accompany the application and an additional fee

of \$10.00 is required when the certificate is issued.

Application blanks and further information can be obtained by addressing the chairman, Walter L. Berring, M. D., 406 Sixth Avenue, Des Moines, Iowa.

The Fourteenth Edition of the American Medical Directory has been completed and copies are now available for general distribution.

It has 2500 pages and is a nearly complete list of physicians in the United States, its dependencies and Canada. It has much additional data about hospitals, libraries and other institutions as well as facts about medical education, licensure, and society affiliations.

The 1936 edition contains 183,212 names, or 4,796 more than were in the previous edition—issued in 1934. The names of 13,157 physicians have been added and 7,684 names have been removed because of death. More than 70,000 changes of address have been made, in addition to thousands of changes in society affiliations, teaching positions, specialties and office hours.

Its first section of 221 pages has a great deal of useful information. It contains the constitution and by-laws of the A.M.A., the principles of medical ethics and a list of meeting places of the annual sessions of the association since the first one in 1847 with the names of the president installed during each meeting. In this section also are lists of the hospitals that are approved for interne training, the medical journals published in the United States, Canada, Philippine Islands and Puerto Rico, the names of medical officers of the various government services, the national organizations for the various specialties with the names of their members, the membership of the new examining boards for the specialties, the medical schools in the United States and Canada with a brief history of each and the members of the National Board of Medical Examiners.

A new feature in this edition is a key letter showing that a physician has been certified as a specialist by an approved examining board.

The 65th annual meeting of the American Public Health Association is to be held in New Orleans October 20-23, 1936. There will be in the neighborhood of 300 speakers and over 100 scientific exhibits. There are highly specialized programs designed to solve current problems in the fields of administration, nursing, school health work, health education, sanitary engineering, vital statistics, laboratory practice, child hygiene, industrial hygiene, epidemiology. The advances in Public Health will occupy one general session. Other general sessions will deal with diphtheria immunization, mental hygiene, mosquito-borne diseases, and professional education. There will be a symposium on syphilis and others will include industrial sanitation, milk and dairy products, etc.

Over 2000 are expected to be in attendance. This should be an interesting meeting for all persons interested in Public Health work.

The Academy of Physical Medicine has its annual meeting in Boston October 20th-22nd at the Hotel Statler. A survey of the speakers impresses one that this should be a profitable meeting.

YOUR OFFICIAL HOST

During the Forthcoming

SOUTHWESTERN MEDICAL ASSOCIATION CONVENTION

Nov. - 19 - 20 - 21, 1936

Hotel Cortez

"Overlooking the Plaza"

EL PASO, TEX.



A Message

We are glad you're coming to El Paso for this important Convention. Many new discoveries in the Medical and Surgical Science will be discussed. You will also discover that the Cortez has not only undergone a change in name, but that the entire Hotel has been greatly improved.

Leas Campbell, Mgr.

23rd. Annual Meeting Southwestern Medical Association

Hotel Cortez, El Paso, Nov. 19, 20, 21

PROGRAM

SUBJECTS AND CONFERENCE LEADERS

General Medicine

DR. RALPH A. KINSELLA, St. Louis, Missouri, Professor of Internal Medicine, St. Louis University School of Medicine.

General and Thoracic Surgery

DR. HAROLD BRUNN, San Francisco, California, Professor of Surgery, University of California Medical School.

General and Traumatic Surgery

DR. ISIDORE COHN, New Orleans, Louisiana, Professor of Clinical Surgery, Tulane University School of Medicine.

Urology

DR. NELSE F. OCKERBLAD, Kansas City, Missouri, Associate Professor of Clinical Surgery, University of Kansas School of Medicine.

Röntgenology

DR. JAMES T. CASE, Chicago, Illinois, Professor Radiology, Northwestern University School of Medicine.

Internal Medicine and Allergy

DR. WARREN T. VAUGHAN, Richmond, Virginia, Editor of Journal of Laboratory and Clinical Medicine.

Otology, Laryngology, Rhinology

DR. THOMAS E. CARMODY, Denver, Colorado, Past President of the American Laryngological, Rhinological and Otological Society.

Obstetrics

DR. WILLARD R. COOKE, Galveston, Texas, Professor of Obstetrics and Gynecology, University of Texas School of Medicine.

THURSDAY MORNING, NOVEMBER 19, 1936

Registration at Headquarters in Hotel Cortez

From 8:00 a. m. Thursday, November 19, 1936

Registration fee for members of the Association is \$5.00 and \$8.00 for non-members.

FIRST GENERAL ASSEMBLY

Ball Room—10:00 a. m.

Dr. J. J. Gorman, President, Presiding

Opening Address Dr. J. J. Gorman

"Pelvic Appendicitis" Dr. Harold Brunn

"Career of the Heart" Dr. Ralph A. Kinsella

12:30 p. m.—Luncheon

Round Table Discussions

"Amputation at Knee Joint for Arterial Disease" Dr. Harold Brunn

"Chronic Rheumatism" Dr. Ralph A. Kinsella

"Methods of Diagnosis of Infection of the Accessory Sinuses" Dr. T. E. Carmody

"The Irritable Female Bladder" Dr. N. F. Ockerblad

"Use of Roentgenology by the General Practitioner" (Question Box) Dr. James T. Case

"Obstetrics" Dr. Willard R. Cooke

"Questionnaire" Dr. Warren T. Vaughan

AFTERNOON GENERAL ASSEMBLY

Ball Room—2:15 p. m.

"The Problem of Gross Blood in the Urine" Dr. Nelse F. Ockerblad

"The Diagnostic Application of X-ray in Digestive Disorders" Dr. James T. Case

"The Relief of Pain in Labor" Dr. Willard R. Cooke

ASSOCIATION DINNER

Ball Room—6:30 p. m.

to be followed by

EVENING GENERAL ASSEMBLY

8:00 p. m.

"Relation of the Oral Cavity to Otolaryngology and General Medicine" Dr. Thomas E. Carmody

"Newer Methods in the Diagnosis and Treatment of Food Allergy" Dr. Warren T. Vaughan

"Osteomyelitis" Dr. Isidore Cohn

FRIDAY, NOVEMBER 20, 1936

CLINICS

8:30 a. m.

"General Surgical Cases and Gall Bladder Surgery" Dr. Harold Brunn

"Diseases of the Ductless Glands" Dr. Ralph Kinsella

"Urinary Calculus" Dr. Nelse F. Ockerblad

"Ear, Nose and Throat Cases with Discussion" Dr. T. E. Carmody

"Masses in the Neck" Dr. Isidore Cohn

"Obstetrics" Dr. Willard R. Cooke

"Allergy Cases" Dr. Warren T. Vaughan

"X-ray Therapy with Demonstrations" Dr. James T. Case

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M. B. Culpepper
Pres., Las Cruces

NEW MEXICO SOCIETY DEPT.

L. B. Cohenour,
Sec., Albuquerque

Carlsbad, N. M., May 6-8, 1933.

((All business and scientific sessions were held in or adjacent to the Crystal ballroom, Crawford Hotel).))

May 6, 1936.

Meeting of the council was called to order by vice-president, Dr. George W. Jones at 8:30 a. m.; present were ex-officio members Drs. G. W. Jones and L. B. Cohenour and members, Drs. Carl Mulky and C. A. Miller.

Dr. Jones read a telegram from Dr. C. W. Gerber, (president), expressing regret at his inability to attend and asking Dr. Jones to preside in his stead.

Financial report of the secretary-treasurer, Dr. L. B. Cohenour was presented:

I hereby submit a report of the financial affairs of the New Mexico Medical Society, ending May 6, 1936.

Balance on hand at annual report, May 23, 1935.....	\$1,558.52
Delinquent dues collected from 4 members.....	20.00
Dues from 3 new members.....	15.00
Annual dues from 193 members for 1936.....	965.00
Total cash received to May 6, 1936.....	2,558.52

Disbursements

Southwestern Medicine for 1935, 211 members.....	422.00
Reporter for 1935 meeting, balance, one-half, fee.....	87.50
Treasurer's bond for 1935-1936.....	5.00
Deveau Typewriter Company.....	3.06
Baser Printing Company (500 letterheads).....	4.50
Secretary's salary for 1935-1936.....	300.00
Baser Printing Company (500 3c stamped envelopes).....	19.00
Western Union (Councilors on medical legislation).....	5.22
Western Union (Councilors).....	1.51
Mountain States Tel. & Tel. Co. (toll calls to Las Cruces and Santa Fe re: medical legislation).....	4.23
Mountain States Tel. & Tel. Co. (toll calls to Las Cruces by cancer committee).....	1.78
Walsh Printing Company (250 delegate cards).....	4.75
Western Union (Re: fraternal delegate to Arizona state meeting).....	1.82
Reporter for 1936 meeting, advance of one-half fee.....	62.50

Total.....	922.87
Balance.....	\$1,635.65

Outstanding Indebtedness

Southwestern Medicine for 1936 for 193 members.....	386.00
Secretary's salary for 1936-1937.....	300.00
Reporter for 1936 meeting (balance-in full).....	62.50
Treasurer's bond for 1936-1937.....	5.00
Approximate total indebtedness.....	753.50
Expected balance after all bills are paid.....	882.15

Respectfully submitted,

(Signed) L. B. COHENOUR, secretary-treasurer.

The secretary-treasurer's report was approved and accepted as read.

Motion by Dr. Carl Mulky that Lea County Society and Eddy County Society be authorized to combine under the name of Eddy-Lea County Society, as provided for in chapter 7, section 4, of the constitution and by-laws, was seconded by Dr. C. A. Miller and carried.

Dr. Carl Mulky spoke in regard to the official journal of the Society—Southwestern Medicine—and the assessment of \$2.00 per member therefor, and moved that the secretary request the business manager of Southwestern Medicine to furnish annually, prior to the meeting of the New Mexico Medical Society, a financial statement. Motion seconded by Dr. C. A. Miller and carried.

Secretary Cohenour presented applications for membership from Drs. H. B. Johnson, Hot Springs, N. M., Harrison Eilers, Mountainair, N. M., and Richard D. Bartels, Socorro, N. M. and read testimonials in their behalf from physicians of good standing. They were voted in as members.

No further business arising, the meeting was adjourned.

As Mr. F. Guthrie, state director of New Mexico Relief & Security Authority, was in Carlsbad and

wished to take up the matter of medical relief; immediately following the meeting of the council Dr. Carl Mulky, chairman of the committee on medical relief, appointed last year to confer with the old F. E. R. A. with power to act for the society, reported that after various meeting and discussion the committee adopted a resolution which was presented to the New Mexico Relief and Security Authority, as follows:

Be It Resolved That:

One or more physicians be employed to handle all indigent medical relief on a salary basis to be paid from indigent funds levied by the counties. The selection of the physician or physicians to be made by a committee of three, composed of one member of the board of county commissioners in the county affected, and a physician from the county affected, appointed by the New Mexico State Bureau of Public Health—the third member of the committee to be selected by the other two members. The salary of the physician or physicians is to be fixed according to the number of unemployable cases cared for by him. That cases requiring special medical services, i.e., laboratory work, x-ray, surgery, G.U., tuberculosis, etc., be referred by the physician or physicians to the proper accredited specialists in that line. That a plan be formulated to make provision for hospitalization in existing hospitals for emergency cases of indigent unemployable cases."

(Signed) Carl Mulky, M. D., Chairman.
January 14, 1936.

Dr. Mulky stated that Mr. Guthrie, state director of New Mexico Relief & Security Authority, had found that such a plan did not work well in all cases and that he (Mr. Guthrie) wished to tell just what he had in mind.

Mr. Guthrie was presented. He stated that he had submitted the resolution signed by Dr. Mulky to a meeting of the board of directors of New Mexico Relief & Security Authority held January 15-16, 1936, and that "Mr. Milton made a motion that in the light of the ruling of the Attorney General with regard to indigent funds being used for medical services, and in view further of the chaotic condition of the county indigent fund that the board hold in abeyance the proposal of the medical society until such time as the administrator advised them on the status of the county indigent funds. This motion was seconded by Mr. White and duly carried."

Mr. Guthrie stated that since that time a survey had been made and it had been found that what worked in one county would not work in another, that there is not sufficient money for rendering adequate medical relief, and that he wished to submit three different plans for consideration which he felt might work out and solve the problems:

1. The plan of the old F.E.R.A. with revised fee schedule. In some of the counties of the State, it will possibly be wise to adopt this plan. In others, it will be better to adopt plan No. 2.

2. Employment on a contract basis of a county physician, or where appointed, upon a salary agreed upon by the relief authority.

3. "In some counties", Mr. Guthrie continued, "We are going to have a lot of trouble, but in others where there are good medical societies we feel it is not enough to hire a contract doctor, so why not give the amount of money we have for medical relief to the medical societies and have an under-

standing with them that they will take care of the entire medical relief in that particular county for that amount of money."

Dr. Mulky stated that the only objection he had heard to the fee schedule was over the fee for obstetrical work. He stated that this was talked over at one committee meeting and it was felt that if a flat fee of \$25 was adopted, plus mileage, (this to include both prenatal and post-partum care), it would stop a lot of argument.

Dr. Mulky asked what would be done where a county was broke and had no indigent fund, to which Mr. Guthrie replied that money would be advanced to such a county since medical relief must be cared for. He added, that "we cannot give very much, however, as the relief must be cut down."

No further business arising, as the general meeting had already been called to order, adjournment followed.

The scientific session was called to order at 10 a. m., by vice-president George W. Jones, who announced that he was acting in behalf of Dr. C. W. Gerber president who was unable to attend.

After invocation by Rev. W. M. Weldon, and address of welcome with response by a member of the society, president-elect Dr. M. B. Culpepper was installed and gave his inaugural address. (S. W. Med. 20:247, July, 1936.

The scientific program was carried out as per the program. The papers will be published in Southwestern Medicine.

Meeting of House of Delegates, May 6.

Present: Drs. G. W. Jones (Clovis), presiding, L. B. Cohenour (Albuquerque), Carl Mulky (Albuquerque), G. T. Colvard (Deming), C. A. Miller (Las Cruces), C. F. Beeson (Roswell), J. W. Hillman (Carlsbad) and C. S. Stone (Hobbs).

Dr. Jones in opening the meeting introduced Dr. Lingenfelter of Denver, Colo., fraternal delegate from Colorado, who stated that the president of the Colorado state society wished him to present a proposition brought up at their last annual meeting, at which a resolution was introduced and unanimously adopted, as follows:

"Whereas, the scientific, social and economic problems of the medical professions of the Rocky Mountain States are common to each of these States and should be made the subject of a joint meeting of the Medical Societies of these States; and

"Whereas, It is fitting that that society, being the largest medical organization in the Rocky Mountain region, take the lead in organizing such a joint meeting; now therefore, be it

"Resolved by the House of Delegates of the Colorado State Medical Society:

"That the facilities of this society are hereby offered to the State Medical Societies of Wyoming, Utah, New Mexico, Montana and Arizona for the organization, preparation and conduct of such a meeting, and the said societies are hereby cordially invited to join with us in such a meeting to be held at a mutually convenient time in the year 1937 in the city of Denver; further:

"That the president is hereby instructed to appoint a special committee whose duty it shall be (1) to suitably present this invitation to the societies aforesaid; (2) upon acceptance of this invitation by two or more of the said societies to proceed in the name and with the authority of this house with such preliminary arrangements as may be necessary; and (3) to report to this house at the sixty-sixth annual session with recommendations for such further action by this house as may be necessary to carry out the purposes of this resolution."

Dr. Lingenfelter stated that since the adoption of the resolution the matter had been discussed in an informal way with officers and members of the Utah Society and Salt Lake City and Ogden societies, and they regard it as a most welcome innovation. "It will be presented before their houses at their annual meetings. We are glad to extend this invitation to the New Mexico Medical Society for the action of your House of Delegates.

A brief sketch of the reasons for such a meeting are:

1. Discussion of scientific problems. Those com-

mon to the Rocky Mountain Region are Rocky Mountain fever, high mortality with pneumonia, problem of health seekers, effect of altitude upon certain diseases and their prognoses. All these things can be studied at a general meeting and the conclusions reached will go much further and have far more weight than those arrived at by any single state society.

2. Increasing travel and increasing speed of travel will soon begin to destroy what is the comparative isolation of the Rocky Mountain region to certain diseases and bring us conditions with which we are more or less unfamiliar.

Guest speakers could bring the Rocky Mountain region men up-to-date on these matters.

3. Economic side. The peculiarity of the geography and population of the Rocky Mountain states give us common problems. The distribution of medical service could be discussed at such a meeting. Problems of the F.E.R.A. as they existed in 1933-1934-55 might have been lessened and more uniformity established if we could have operated as a whole instead of separate units. Increasing activity of the Federal Government in medical matters makes far more valuable any recommendation such an organization could submit rather than any single state as a unit. It seems to us the desires of the Rocky Mountain states are forced to conform to the desires of the eastern states because the Rocky Mountain states have not been in a position to express themselves as a group.

As to the time for such a meeting, we suggest midsummer, probably during the first three weeks of July. During the hot months there are many physicians vacationing somewhere in the Rockies—men of national reputation—men whom perhaps the individual societies might hesitate to ask to address them as a single unit because they might not feel in a position to offer a fitting remuneration. If however, such men were in this region and four states combined asked them to address a meeting, simply travel expenses would probably be all that would be required.

Another thing: I have talked with several of the members of the Rocky Mountain Radiological Society. They hold a midsummer meeting in Denver and will be glad to arrange so their meeting comes immediately prior or subsequent to the one we propose. This would bring a good crowd of men prominent in that work.

How often should such a meeting be held? We doubt if it should be held every year—probably every two or three years. However, that is a matter for discussion at the first meeting. They would not be held all the time in Denver. We are simply starting it out as the largest state society. Salt Lake City, Albuquerque, Cheyenne, perhaps will want the next meeting. During the interim some sort of organization perhaps should be developed to handle matters that may arise regarding the proposed merger and the different societies should have representatives.

How should the meetings be financed? Colorado believes that it would be possible to finance the first meeting without calling on the other states for financial aid. It has been suggested that there should be a nominal registration fee, probably \$2.00. The cost of future meetings and method of financing could be determined by the experience derived at the first meeting.

How many days should the meeting be held? Suggestions have been made ranging from two to five days. A meeting for two days would hardly be worth while, it would seem; one should probably extend three to four days.

Should the organization be given a formal name? We believe it should. We do not have any

particular name in view but names have been suggested, such as Rocky Mountain Post Graduate Group, Rocky Mountain Clinic, Rocky Mountain Medical Center, etc. etc. Those are things that can be brought up for consideration at the meeting.

It gives me great pleasure to officially invite the New Mexico Medical Society to join us in such a meeting. We hope you will take action on this. Mr. Sethman, our executive secretary, is fully familiar with this subject and will be glad to add anything further if you have any questions you wish to ask."

Dr. G. T. Colvard: "In view of the fact there are so few of the delegates present, I move that we discuss this but defer action upon it until tomorrow when there will be a large representative delegation present though personally I am in favor of the proposition."

Dr. C. A. Miller: "I am very much in favor of the proposition, but second the motion of Dr. Colvard."

Dr. G. W. Jones: "Dr. Lingenfelter will not be here to present the subject tomorrow but of course we can take it up ourselves."

Dr. Carl Mulky: "What effect would such a merger have on our Southwestern Association? For the information of Dr. Lingenfelter, I would state that Arizona, New Mexico and West Texas (El Paso) are combined in the Southwestern Medical Association, which publishes the official organ in which the proceedings of the state societies, the papers, etc. are published throughout the year, and whether this would interfere with that or not is a matter for consideration."

Dr. Lingenfelter: "It is not our purpose to force any society to give up any other connections it may have. I see no reason why it should interfere in any way with any other affiliations or meetings. It is not the purpose of this meeting to take the place of the regular state meetings, but rather to be an additional meeting."

Vote was then taken on the motion pending—that action be deferred until tomorrow—and motion was carried.

Dr. L. B. Cohenour, secretary-treasurer, read the minutes of the council meeting held earlier in the day.

Motion by Dr. G. T. Colvard that the minutes of the council meeting be approved as read, was seconded by Dr. C. A. Miller and carried.

The secretary's report was presented by Dr. L. B. Cohenour as follows:

House of Delegates:

"I hereby render a report of the affairs of the office of secretary-treasurer for the term ending with this session:

At the meeting held in Albuquerque, New Mexico, May 23, 1935, there were 4 members suspended for non-payment of dues, and immediately following, these 4 were reinstated.

Members at this time are as follows:

	1935	1936
Bernalillo County	52	46
Chavez County	25	18
Colfax County	14	15
Curry County	10	10
Dona Ana County	12	12
Eddy-Lea County	10	4
Grant County	10	12
Luna County	6	6
McKinney County	8	10
San Miguel County	10	11
Santa Fe County	15	16
Union County	5	9
Members at large	25	25
Total in good standing at this date		193

Three applications for membership were received to be presented at this meeting, and membership cards issued to them in advance.

Death of six members were noted. (See necrology committee report).

Respectfully submitted,

(Signed) L. B. Cohenour, secretary-treas.

Motion by Dr. C. A. Miller that the secretary's report be accepted as read, was seconded by Dr. G. T. Colvard and carried.

The secretary, Dr. Cohenour, read a communication received from the American Committee on Maternal and Child Welfare, action on which was considered unnecessary.

Communication from the Red Cross on the establishment of first-aid stations along national highways, was read by the secretary, Dr. Cohenour, and motion by Dr. C. F. Beeson (Roswell), that the society endorse the plan proposed, was seconded by Dr. C. A. Miller and carried.

No further business arising, motion to adjourn was entertained and carried.

Meeting of the House of Delegates, May 7.

Present: Drs. M. B. Culpepper (Carlsbad), presiding, L. B. Cohenour, (Albuquerque), Carl Mulky (Albuquerque), W. R. Loveace (Albuquerque), H. A. Miller (Clovis), G. W. Jones (Clovis), G. T. Colvard (Deming), B. L. Jones (Fort Bayard), C. A. Miller (Las Cruces), C. F. Beeson (Roswell), I. J. Marshall (Roswell), E. F. McIntyre (Santa Fe) and J. W. Hillman (Carlsbad).

Minutes of the meeting of May 6 were read by the secretary, Dr. L. B. Cohenour and no objection arising, were ordered approved.

Dr. Carl Mulky moved that the New Mexico Society accept the invitation of the Colorado State Society for holding a general meeting in Denver, in 1937, with the understanding that this does not in any way affect the Society's affiliation with the Southwestern Medical Association, and that the president shall appoint a committee of three to confer with the other states, especially Colorado, about the arrangements for this meeting. Seconded by Dr. C. F. Beeson and carried.

Dr. Carl Mulky reported that at the meeting in Albuquerque last year, a committee composed of five members, known as the Medical Relief Committee, was appointed to confer with the authorities of the old F.E.R.A. and other relief authorities in New Mexico and empowered to act for the society during the interim. This committee consisted of Dr. Mulky (chairman), Dr. R. L. Bradley, Dr. V. E. Birchtoold, Dr. F. H. Crail, and Dr. George Colvard. Dr. Mulky stated that "we had a lot of correspondence with the old F.E.R.A. authorities and several meetings with the executives and got absolutely nothing." About the time we would get something thrashed out, there would be a new administrator and we would have to start all over again. Then the old F.E.R.A. went out and the State Relief & Security came in. We had a meeting with the administrator and thought we had a plan worked out for medical relief to be paid out of state relief funds, but the board decided not to act upon it for the time being until a survey could be made to determine the status of the county indigent funds. Mr. Guthrie, the State Director of New Mexico Relief and Security Authority, was here yesterday and met with the few of us who were here and he proposes in view of the widely varying conditions throughout the state, three different plans. (See minutes for May 6).

Dr. Mulky moved that the three plans suggested by Mr. Guthrie be approved by the society and the adoption of the plan applicable to any community, be left to the members in that locality.

Motion seconded by Dr. C. F. Beeson and carried.

Dr. G. P. Lingenfelter, fraternal delegate from Colorado, stated that he and Mr. Sethman had to leave and wished to express their appreciation for

the many courtesies received and for the cooperative spirit shown in accepting the proposition of the Colorado society. "We will use our best endeavors", he said, "to make the occasion a pleasant and profitable one for you."

The Chair thanked the doctor and asked that he express to his society the thanks of the New Mexico Medical Society for the message he had brought, and for his visit.

Election of officers for the ensuing year was then declared in order, with results as follows:

President-elect: Dr. G. W. Jones, Clovis;

Vice-president: Dr. W. R. Lovelace, Albuquerque;

Secretary-treasurer: Dr. L. B. Cohenour, Albuquerque (re-elected).

Councillors for three years:

Dr. C. F. Beeson (Roswell).

Dr. H. A. Miller (Clovis) re-elected.

Delegate to A. M. A. for two years:

Dr. H. A. Miller (Clovis).

Alternate:

Dr. W. R. Lovelace, Albuquerque.

Board of Managers, Southwestern Medicine: (Re-elected):

Dr. J. R. Earp, Santa Fe;

Dr. C. H. Gellenthien, Valmora.

Meeting place 1937: Dr. H. A. Miller extended a cordial invitation to the society, on behalf of their Chamber of Commerce and others, to hold the 1937 meeting at Clovis.

Motion by Dr. C. A. Miller, seconded by Dr. Carl Mulky that the 1937 annual session be held in Clovis, N. M., was unanimously carried.

Dr. H. A. Miller presented a resolution relating to the state public health service:

"Whereas, an act was passed by the last session of the state legislature of New Mexico districting the state in ten districts with corresponding health officers, and

Whereas, that after almost a year the law is still met with almost universal opposition on the part of constituted county governments and most physicians and surgeons in the state for the following reasons:

1. Health officers cannot, because of the size of the districts, adequately cover same with any degree of efficiency commensurate with both the demand of health services and its costs thereof.
2. The counties in the district are required to provide means of providing quarters and compensation for additional personnel for a proper enforcement of the act, and likewise additional means in caring for its medical and surgical services for their indigent population.
3. That since the state legislature made no provision for the raising of additional revenue above the 20 mill limit to adequately administer the act, the county governments are absolutely without legal recourse in levying additional taxes for the health fund.

Therefore, it is resolved by the New Mexico State Medical Society in session at Carlsbad, New Mexico, that under the existing provisions for the administration of the Health Act and because of its insufficient, uneconomic and physically unworkable character, the society is opposed to the act and hereby goes on record as favoring and urging its early repeal by the next session of the State Legislature."

Considerable discussion ensued, participated in by Drs. C. A. Miller, Carl Mulky, H. A. Miller, G. T. Colvard, E. F. McIntyre and G. W. Jones, with motion by Dr. Carl Mulky that action on the resolution be deferred until Dr. Earp, Director of State Bureau of Public Welfare or one of his representatives, could have an opportunity to explain their attitude and reasons for the bill. Motion seconded by Dr. C. A. Miller and carried.

As Dr. Earp was in the vicinity, he was paged and in the interim the president announced the appointment of committees:

Committee on necrology: Drs. W. R. Lovelace, George T. Colvard and E. F. McIntyre.

Committee on resolutions or thanks: Drs. C. A. Miller, W. R. Lovelace and Charles F. Beeson.

Committee on Medical Relief continued, Drs. Carl Mulky, chairman; R. L. Bradley, V. E. Birch-told, F. H. Crail and George T. Colvard.

Committee on medical defense continued, Drs. W. R. Lovelace, chairman; Carl Mulky, L. B. Cohenour, F. F. Doepp and C. H. Gellenthien.

Committee on Rocky Mountain conference meeting, Drs. H. A. Miller, C. A. Miller and L. B. Cohenour.



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Dr. J. R. Earp, appeared and at the request of the president explained the act passed at the last session of the state legislature districting the state in ten districts. He stated there was nothing in the act that required additional quarters for health officers; that the old act stated quarters must be in the county court house, and no fund had been provided for additional quarters. The act requires that the district health officers be paid, and that the ten district health officers take the place of 31 county health officers. The legislature made no provision for additional revenue. The cost of administering this act is practically the same as what the counties are already paying for part time service, which is less than was being paid in 1932, perhaps one to two thousand dollars more than for the fiscal year 1934. Some counties may have a little extra burden but there has been no increase as a whole put on the counties. In many counties additional money is being paid out for public health nursing, etc. The total amount raised this year will be a little more than that of last year. The main argument seems to be that the health officers cannot, because of the size of their Districts, adequately cover them. The public health service since 1911 has refused to give any assistance to cities unless under a full-time health officer and this whole thing depends on whether you feel it is important to have full-time health officers.

From a practical viewpoint New Mexico is going to get \$50,000 next year that we could not possibly get without this act. It means that instead of in only six counties where we have had full-time service, we are districting the whole state. When it comes to the size of the Districts, that of course is something we cannot now help, but we are doing something that we have not done before, and if we are going to have full-time health service in New Mexico, these are the smallest districts we can administer. The standards of size, as accepted by the schools of public health, are that a population of 25,000 is the smallest that will start a full-time unit. The ideal size is from 40,000 to 50,000. From the viewpoint of size, we are lots too big and it is a difficulty we have to confront.

Dr. G. T. Colvard; I made a criticism before you came in. In our District, for instance, which is no larger than the average one and certainly not as large as that of Dr. Gerber, the health officer has to spend so much time traveling that he cannot adequately cover the distance. He has to cover approximately 145 or 150 miles one way and 160 the other, schools being located in scattered points in the entire area. In the small counties, the county nurse is performing 80% of the functions of the county health officers. This is not criticism

of any one, but a mere statement of facts. Dr. Gerber once a month gets into Sierra County and perhaps once every three weeks in Lincoln. The detailed management of communicable diseases cannot be efficiently handled and attended to by this set-up, as judged by the past 10 months performance. In our own County we have had more communicable disease than ever before. No one can prove it is due to lack of proper quarantine, but just as an example I quote one case. On the 2nd of January, we had a case of scarlet fever in a child, which was reported Jan. 3rd when the health officer came around, making his regular visit. Nothing was done about the case until the afternoon of Jan. 6th, and in the meantime 15 to 18 other children had contracted the disease.

Considerable discussion ensued, with Dr. Earp explaining points not well understood and answering questions by the various members. The ultimate outcome was a motion by Dr. C. A. Miller, "That the resolution introduced relating to the state public health bureau be tabled indefinitely and that a committee of three be appointed to confer with Dr. Earp of the Bureau of Public Health to work out a solution for the problems in public health. Motion seconded by Dr. W. R. Lovelace and carried.

The chair appointed as members of this committee: Drs. Carl Mulky, W. H. Livingston and George T. Colvard.

No further business arising, the meeting was declared adjourned.

FRIDAY, MAY 8.

The last day of the meeting was devoted to a trip through what has been commonly termed "The Eighth Wonder of the World"—Carlsbad Caverns.

After luncheon in the large room in the caverns, a short general session was held, but owing to the difficulty in hearing the speakers, it was impossible to obtain an accurate account of the proceedings. A motion was made and carried that a committee of three be appointed to draw up a plan of reporting fractures and have it ready for the next meeting. This followed a discussion by Dr. E. Payne Palmer on fractures. The president appointed as chairman of such committee, Dr. P. G. Cornish, Jr, with authority for him to appoint the other two members.

The committee on necrology submitted resolution, as follows:

"During the past year the following New Mexico physicians have died:

Dr. W. T. Brown, Valmora, Aug. 29, 1935.

Dr. W. G. Hope, Albuquerque, Sept. 22, 1935.

Dr. W. E. Rice, Raton, Jan. 7, 1936.

Dr. Frank H. Johnson, Carrizozo, Mar. 23, 1936.



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G. WILSE ROBINSON, M. D.

G. WILSE ROBINSON, Jr., M. D.

Dr. Dildy M. Austin, Belen, March 29, 1936.

Dr. R. L. Butler, Clovis, April 1, 1936.

WHEREAS, Divine intervention has ended the active practice of these members of the New Mexico Medical Society during the past year, who in their passing have taken from us valuable friendships and associations

AND WHEREAS, these physicians have left us only our memories of them and the deep impress they made upon patients and friends,

THEREFORE BE IT RESOLVED, the New Mexico Medical Society in regular annual session expresses deep sorrow because of the loss which it has sustained in the passing of these men,

BE IT FURTHER RESOLVED, That the minutes of our meeting bear the expression of these sentiments and that appropriate indication be sent to the families of the deceased."

(Signed) W. R. Lovelace,
Geo. T. Colvard,
E. F. McIntyre, (Committee).

Report of the resolutions—thanks-committee was submitted:

"We, the New Mexico Medical Society, in its Fifty-fourth Annual Session at Carlsbad, May 6, 7 and 8, 1936, wish to thank:

1. The Carlsbad Chamber of Commerce for the many courtesies extended and the beautiful flowers.
2. The Daily Current-Argus for the publicity given the Association.

3. The Eddy County Medical Society for the excellent entertainment.

4. The Crawford and La Caverna hotels for making their facilities available and the Crawford hotel for extending the use of its rooms for meetings.

5. To the Ladies of the Eddy County Medical Society for the entertainment afforded the wives of visiting doctors in the homes of Mrs. Culpepper and Mrs. Glazier.

6. To the Coco-Cola Company for the coco-cola provided.

7. To Colonel Boles for the use of the Carlsbad caverns as the meeting-place for the last day's session.

C. A. Miller, Chairman,
W. R. Lovelace,
Chas. F. Beeson.

The president, Dr. Culpepper, expressed his deep appreciation for the cooperation of both his home society and state society members and then declared the meeting adjourned until the next annual session.

The tour through the caverns was then resumed.

NEWS ITEMS

The director of Public Health for New Mexico, Dr. J. Rosslyn Earp, releases a column of public health notes to the New Mexico newspapers each week, copies of which are also being sent to libraries where considerable interest is being manifested.

Dr. James R. Scott, health officer for District No. 3 Albuquerque resigned during September for the purpose of teaching at the University of New Mexico during the coming year.

Dr. J. O. Long will become health officer for District No. 3 of Albuquerque.

The New Mexico Bureau of Public Health now owns 25 electrical transcriptions of health plays and health subjects that are being broadcast over KIUJ, Santa Fe, at 10:15 o'clock A. M. every Wednesday and Friday.

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*Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245
Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154
N. Y. State Jour. Med., June 1935, Vol. 35, No. 11
Arch. Otolaryngology, Mar. 1936, Vol. 23, No. 3, 306-309

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Dr. E. F. McIntyre left Santa Fe Sept. 1 to take up a six months' fellowship at Johns Hopkins University.

Dr. A. A. Wolfson will be in charge of the public health work at Santa Fe during Dr. E. F. McIntyre's absence.

Col. C. M. Adams, Assistant State Director of Malaria Control, resigned his position August 1st.

The New Mexico Bureau of Public Health has the following personnel: Director, J. Rosslyn Earp, M.R., C.S., Dr. P.H.; Director County Health Work, C. H. Douthirt, M.D.; Epidemiologist, L. A. Dewey, M.D., C.P.H.; Director Child Health, George S. Littell, M.D.; Public Health Engineer, Paul S. Fox, M.S., C.E.; Director of Laboratory, Miss M. Greenfield, M.S.; Registrar, Miss Billy Tober; Supervising Nurse, Miss Mary Emma Smith, R.N.; Ass't. State Director Malaria Control, L. G. Donnelly; Ass't. State Director Community Sanitation, J. D. McGuire.

The New Mexico Health Officer is a small 16-page pamphlet. The September issue contains an article "We Pay for Syphilis," by L. A. Dewey M. D. another entitled "Team Work" by Dr. J. Rosslyn Earp. Dr. George S. Littell has an article on the "Demonstration in San Miguel County"—a demonstration of the work under the Social Security Act. Dr. C. H. Douthirt uses one page giving "Sugges-

tions for Reducing the Incidence of Typhoid Fever in New Mexico." Miss Greenfield has an article on the "Meeting of the Western Branch American Public Health Association" and another dealing with "Diphtheria Culture Media."

All in all the *Health Officer* is an interesting little magazine.

Harry E. Rodgers, M. D., a practicing physician in Albuquerque for 12 years died Sunday, September 9, 1936, shortly after noon in a hospital following a long illness with typhoid fever. Dr. Rodgers was a World War veteran, serving a year as first lieutenant in the aviation corps overseas. He was a native of Charleston, S. C., where he was graduated in medicine by the South Carolina Medical School. He later took postgraduate work in Columbia University Medical School, in Budapest and in Vienna.

Dr. Rodgers is survived by his wife and two daughters, Julia Anne and Harriet Jeanne residing in Albuquerque, two brothers James R. Rodgers and R. L. Rodgers and two sisters, Mrs. Ralph Gilmore and Mrs. Gertrude Stickney. He was 40 years of age and a member of the Masons and the Shrine.

Strictly private funeral services were held Monday afternoon at 4 o'clock from the chapel of the Strong mortuary. The very Rev. Douglas Matthews officiated. The body was taken to the Fairview Park Crematory.

Stephen Schuster,
President

EL PASO COUNTY SOCIETY DEPT.

L. O. Dutton,
Secretary

MEETING OF EL PASO CITY-COUNTY HOSPITAL STAFF

DR. LEE, interne, presented the following case: This woman came in with a history of swelling of abdomen for about 6 months and pain and a mass in the right side for 2 to 3 weeks. The enlargement was gradual and was painless until 2 to 3 weeks ago. "Colicky" pain began in the right side which did not radiate but was knife-like in character. About the same time she noticed a mass in the right upper quadrant. She had had no nausea, vomiting, hematemesis, marked constipation or diarrhea; she had had a poor appetite.

Past History: Her general health had been good—no serious accidents or illnesses. About 6 years before she was in a hospital for a tumor caused by "being struck on the abdomen with a stick."

Physical examination showed a short, well developed, slightly obese Mexican woman about 50, in fair general condition, temperature 103.6 soon subsiding to 99, pulse 100, B. P. 100/75, resp. 30, slightly labored; sclerae were slightly icteric; tongue was coated; abdomen was markedly distended; the right upper quadrant had a large, firm nodular mass which did not descend on respiration and which seemed to rise from the right kidney fossa; there was marked tenderness on pressure in this area. There was an old midline scar from umbilicus to symphysis; skin was hot, inelastic, coarse; glandular enlargement was general.

Gastric analysis: Total amount aspirated 600 c.c.; total acidity 44, free HCl. 24; round and epithelial cells were present in the urine; the blood showed 97% hemoglobin, 9000 white count, 56 polys, 4 monocytes and 40 lymphocytes; Kahn on 6/9/36 was 4 plus, but repeated in hospital was negative; Eagle test however was positive; azurophilic granules were seen in lymphocytes and a goodly number of platelets; Van den Bergh direct showed no change within 5 minutes; indirect was too light to read.

DR. RAWLINGS: This was an interesting case. The temperature subsided after a few days in the

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hospital, coming down to 99 at the end of the 5th day. The 2nd week she had slight fluctuations in temperature, going twice to 100 and the latter part of the week to 101. Pulse ranged between 80 and 90, and respirations were around 26. The entire interest centered around the abdominal tumor. We felt that the syphilis probably had little to do with the tumor. There was some jaundice, and I think that was probably the outstanding finding in addition to the tumor itself.

The tumor was definitely palpable. It was about 10 cm. across and definitely below the costal margin. With a finger between the right costal margin and the tumor and a hand behind in the right costovertebral angle pushing upwards we could feel the mass between the fingers.

We made a tentative diagnosis of hypernephroma.

The surgeon agreed with the diagnosis.

The G. I. series showed that she had almost complete 6 hour retention of the barium meal and showed no cap at 2 hours, 4 hours, or 6 hours. At the end of 6 hours there was slight emptying and some barium was seen in the colon, but the emptying was slight. This was in keeping with the gastric findings in the 600 c.c. of gastric contents which was aspirated before the test meal. This led to a diagnosis of partial obstruction of the pylorus.

A pyelogram by Dr. Rogers of the right kidney showed nothing abnormal. We had, then, this large mass with a partial obstruction of the stomach, and yet the mass was well off to one side. The patient developed a tremendous hyperpyrexia soon after the pyelogram was made and died inside of 6 hours.

DR. AWE: I missed 3 abdominal tumors in a row. One was a Chinaman with a tumor in the midline, and I thought it couldn't be anything but a pancreatic tumor. Dr. Armistead opened him up and it was a hypernephroma. In this case we are possibly dealing with a tumor of the liver. It is too far over for the pancreas, and with the gastric acidity as high as it was I doubt that malignancy enters in. Dr. Mason believes she has a carcinoma of the stomach. The tumor is in the middle and does not move on deep respiration. The tumor apparently is vertical. I think her acidity is entirely too high for a gastric malignancy. Most cases of gastric carcinoma show a total acidity of well under 40. I think it is a tumor of the kidney or liver, and not of the stomach.

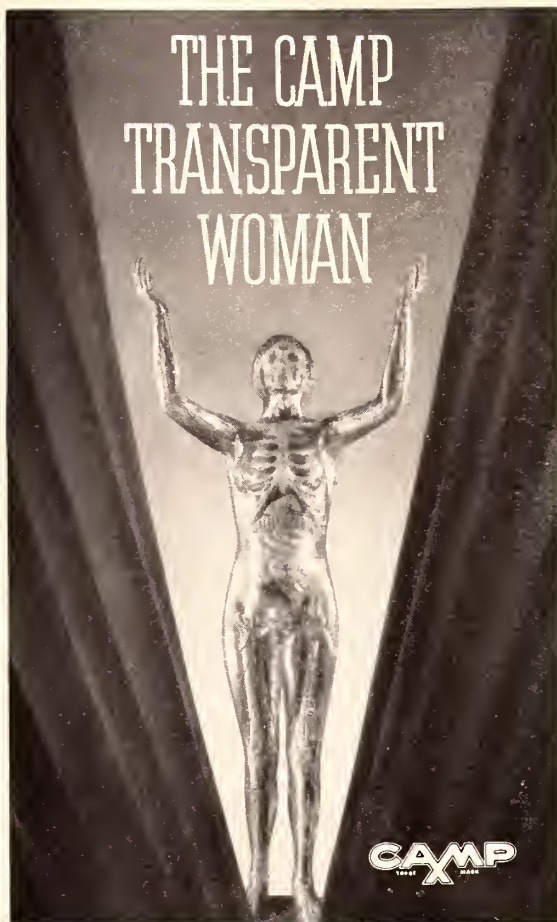
DR. CUMMINS: It is apparent that there is a tumor pressing on the duodenum or pylorus and causing a partial obstruction. One should not think of malignancy for 2 reasons: The hemoglobin of 97% and the high acidity. However, Mayos have reported many cases of high acidity in carcinomas of the stomach. In the first place, it is evident that she has a tumor that probably does not involve the stomach and probably does not involve the kidney.

DR. RAWLINGS: (In answer to question) We had no further idea of the hypernephroma until following pyelogram, she developed a hyperpyrexia and died. From the 3rd of July she had a great deal of vomiting, but stools were yellow in color and contained bile. From the 29th of June to the 14th of July she lost weight, which we attributed to the vomiting. There was no history of vomiting before that.

DR. STRONG: It might be a liver abscess.

DR. WERLEY: I saw a case with a tumor on that side, once, that proved to be a large abscess.

Further discussion on this case by the Phoenix Clinical Club with the autopsy findings will appear next month. Are there others of our readers who would offer a diagnosis on this case?



IT IS our privilege to present, as our contribution to public health education in America, the Camp Transparent Woman. She is the only one in the world. Life-size, the figure is an exact reproduction of the female body. The outer skin is cellhorn—a substance so transparent that every organ, blood-vessel and bone can be seen clearly through it. An ingenious lighting system illuminates the organs in visible life colors.

We gave this exhibit its appropriate premiere at a private showing to leading health officials, scientists and medical authorities at the New York Museum of Science and Industry. The figure is now being shown to the general public at the Museum before going on a transcontinental tour.

The Camp Transparent Woman is presented to the American public in the earnest hope that it will assist in combating indifference; that it will increase woman's knowledge of her physical self and help to produce a more enlightened attitude toward the advice of the physician.



Samuel H. Camp
President

S. H. CAMP & CO., JACKSON, MICH.

President

ARIZONA STATE ASSOCIATION DEPT. D. F. Harbridge Secretary

The Bulletin of the Los Angeles County Medical Association announces the death of **William Duffield, M. D.**, president in 1918 of the Los Angeles County Medical Association. He died suddenly, Wednesday, Sept. 9, at the age of 70 years.

Dr. Duffield was a native of Bloomfield, Ia., and graduated from the University of Iowa and the University of Pennsylvania. He first practiced at Tampico, Mex., as a surgeon for the Mexico Central Railway Co. and came to Phoenix before 1897. He became a member of the Arizona State Medical Association in that year and was president of the Association in 1902. He moved to Los Angeles in 1906. He had been president of the Southern California Medical Association and of the Clinical Pathological Society. He was a staunch supporter of the Los Angeles City Library and served 3 terms as president of the Barlow Medical Library and saw it through many of its vicissitudes, taking an active part in the transfer of the library to the Los Angeles County Medical Association. He was a constant contributor of books and periodicals to the library and gave not only of these, but also of his strength and advice in all matters pertaining to the library.

Although a resident of California for years, he remained loyal to Arizona.

Dr. and Mrs. George S. Shields and their son, Michael, spent the summer in Denver, Colorado.

Dr. Jess D. Hamer was on his vacation during the month of September and early part of October.

Dr. Mayo Robb attended the annual meeting of the American Academy of Ophthalmology and Otolaryngology in New York City during the last part of September. His wife accompanied him and they will visit friends in New York and Philadelphia during the three-weeks trip.

Dr. Frank L. Borglum, 56 years of age, Whipple Barracks surgeon, and brother of the sculptor, painter, and author, Gutzon Borglum, died of a heart attack, Sunday night, Sept. 20th.

Dr. Borglum was stationed for several years at the Veterans' Hospital at Fort Bayard, New Mexico. Earlier in his career he was located in a Veterans' Hospital in St. Paul. He spent his early childhood in Nebraska and though having a leaning towards the arts he decided to study medicine. He specialized in x-ray work and was one of the first roentgenologists appointed by the veterans' bureau.

Since being in Arizona he was intensely interested in the history of Arizona, especially in the Indians, past and present. So intense was his interest that he really became an authority upon these subjects. He delighted to hike to old ruins and spent many hours at them trying to vision their life at the time the ruins were occupied.

The body was brought from Prescott to Phoenix for cremation and his ashes were taken to Fort Bayard to be scattered over the desert in that region.

Dr. Borglum is survived by his wife, Mrs. Maud Borglum, a son, Wendell Borglum, who flew to Arizona from Austin, Minn., two daughters and E. A. Moore, who flew from Storrs, Conn., Mrs. Earl Ewal who came from Minneapolis by train, a brother Gutzon Borglum from Rapid City, South Dakota and a sister Mrs. Anna Darlow of Omaha, Nebr.

Dr. F. G. Holmes of Phoenix addressed the Rotary Club of Glendale upon the "Advances of Medicine in Recent Years"; on the 18th he addressed the Creighton Parent-Teacher Association on the subject of "Childhood Tuberculosis."

Dr. and Mrs. Harold W. Rice, chief surgeon for the Phelps Dodge Corporation at Bisbee came to Phoenix for a few days' visit during September.

Dr. C. Millard Waters, graduate of Phoenix Junior College and of the Hahnemann Medical school of Philadelphia, Pa., was in Phoenix visiting with his parents, Mr. and Mrs. William Waters, 803 E. Garfield St. He is practicing in Wilmington, Del.

Dr. and Mrs. O. W. Thoeny and sons spent a part of the summer at Laguna Beach, Calif.

Dr. R. J. Stroud and family returned recently from a trip in Europe. He has already been called upon to tell about his trip to the Tempe Rotary Club.

Dr. A. M. Tuthill, Maj. Gen. of Arizona National Guard addressed the Phoenix Junior College on the subject of "Military preparation is an insurance policy against surprise destruction by an enemy."

Dr. and Mrs. Warner W. Watkins of Phoenix were hosts at their home on North Second street at a dinner recently honoring Mr. and Mrs. James Oliver Bauman.

Dr. August Spitalny of San Francisco was in Phoenix visiting his parents, Mr. and Mrs. Max Spitalny en route to his home after a visit to New York and Boston where he has been vacationing and doing research work.

Dr. Dudley Fournier spent a vacation visiting his home in Canada this summer.

Dr. Sam Watson, of Tucson, spent the day in Phoenix recently on his return from the meeting of the Rocky Mountain Tuberculosis Conference. He reported that the conference proved most interesting. It is to meet two years hence in Tucson.

Dr. C. A. Thomas of Tucson was elected vice-president and president-elect of the Rocky Mountain Tuberculosis Conference which met at Albuquerque recently.

Dr. Charles Mills of Tucson attended the Rocky Mountain conference in Albuquerque.

Dr. Charles Sarlin of Tucson was in Albuquerque for the meeting of the Rocky Mountain Tuberculosis conference.

Dr. Russell Callandar of Tucson was in attendance at the Rocky Mountain Tuberculosis Conference in Albuquerque.

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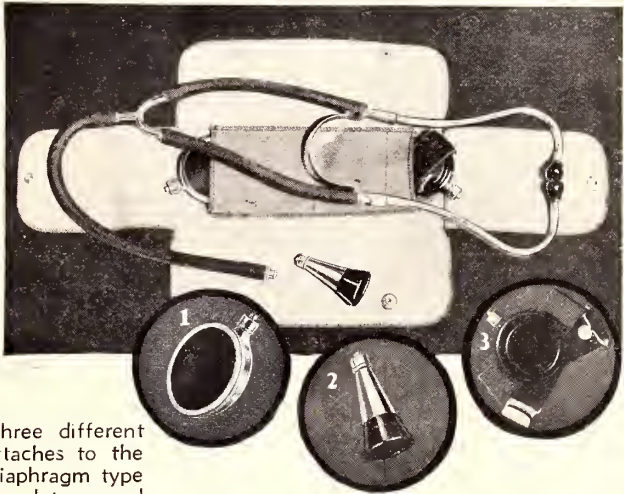
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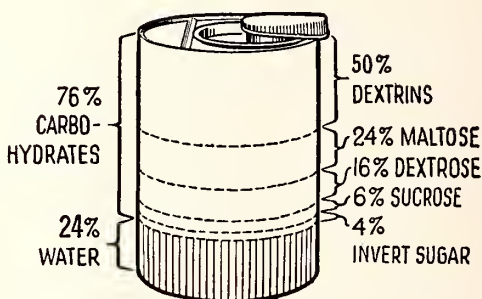
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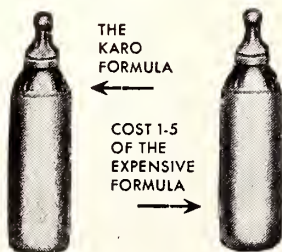


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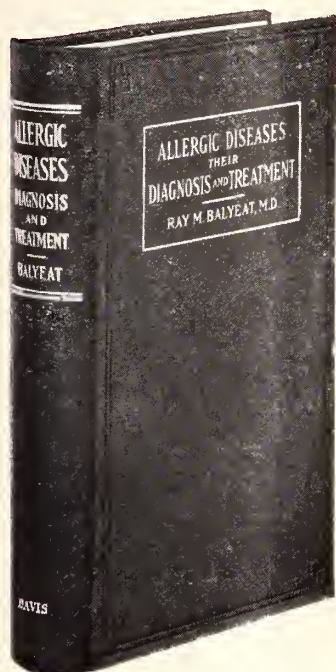
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Since Goldberger's pronouncement, considerable research has been devoted to resolution of the vitamin B complex and, what is equally important, to testing the specificity of vitamin G in the cure of human pellagra (2).

The findings in the laboratory and clinic have not, in some respects, been entirely in accord (3).

As reports of further investigations appeared in the literature, it became clear that the vitamin B complex had been aptly named. At one time claims were made for the existence of as many as eight factors in this complex (4).

While later work has reduced this number, we know today that what has been consid-

ered in the past as vitamin G is, in reality, a combination of several factors. A relation between experimental cataract and vitamin G has been described and, recently, another associated factor was postulated (5).

The significance of these individual factors in human nutrition has not as yet been established. However, regardless of this fact, students of nutrition are agreed that we must provide for the inclusion of so-called vitamin G—admittedly a complex—in the daily dietary. It is also obvious that until more is known about the individual components of the complex, we must continue to depend upon present day bioassay methods to determine the "vitamin G" potencies of foods.

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- (1) 1926. U.S. Pub. Health Report, 41, 297.
 (2) 1934. Am. J. Med. Sci., 187, 512.
 1935. J. Am. Med. Assoc., 104, 1377.
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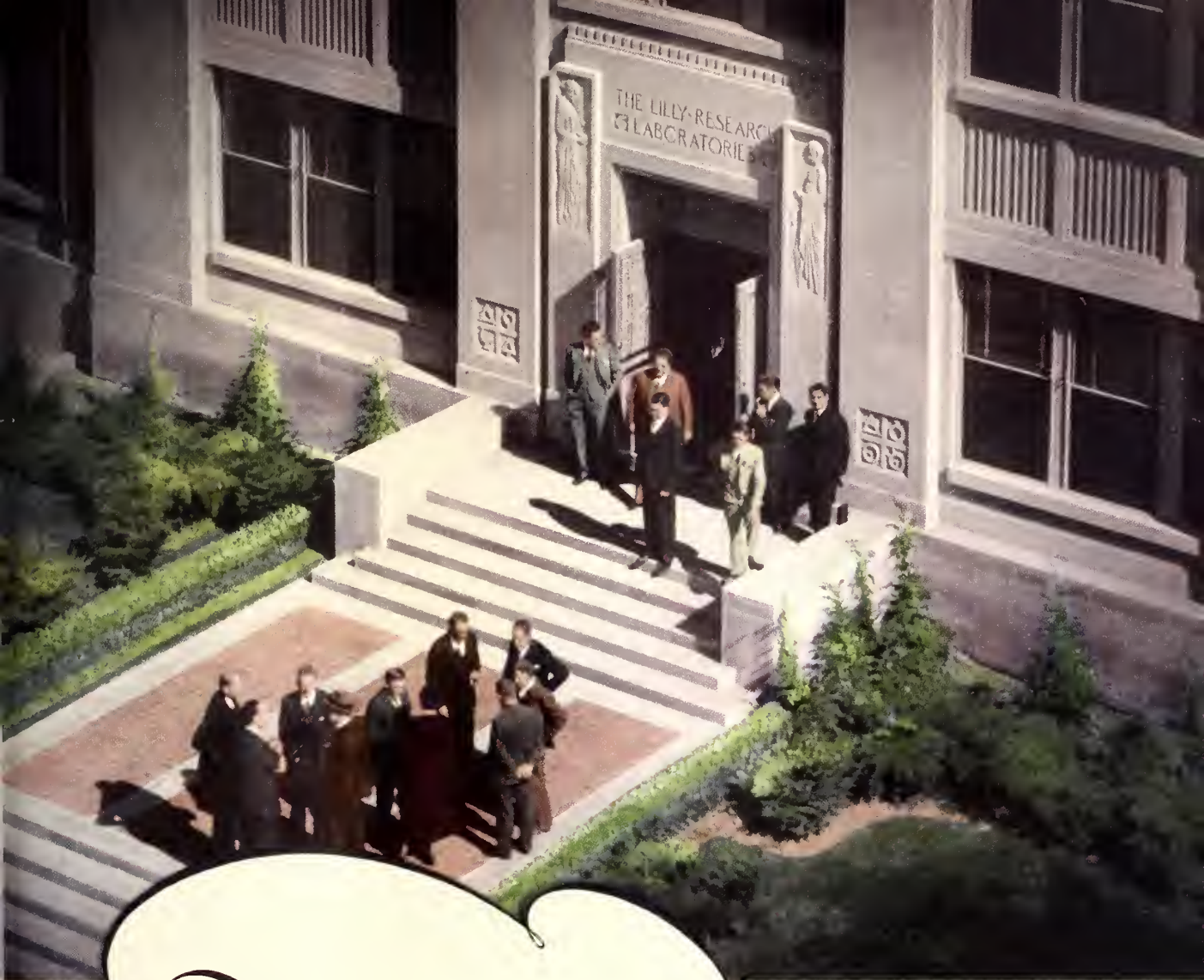
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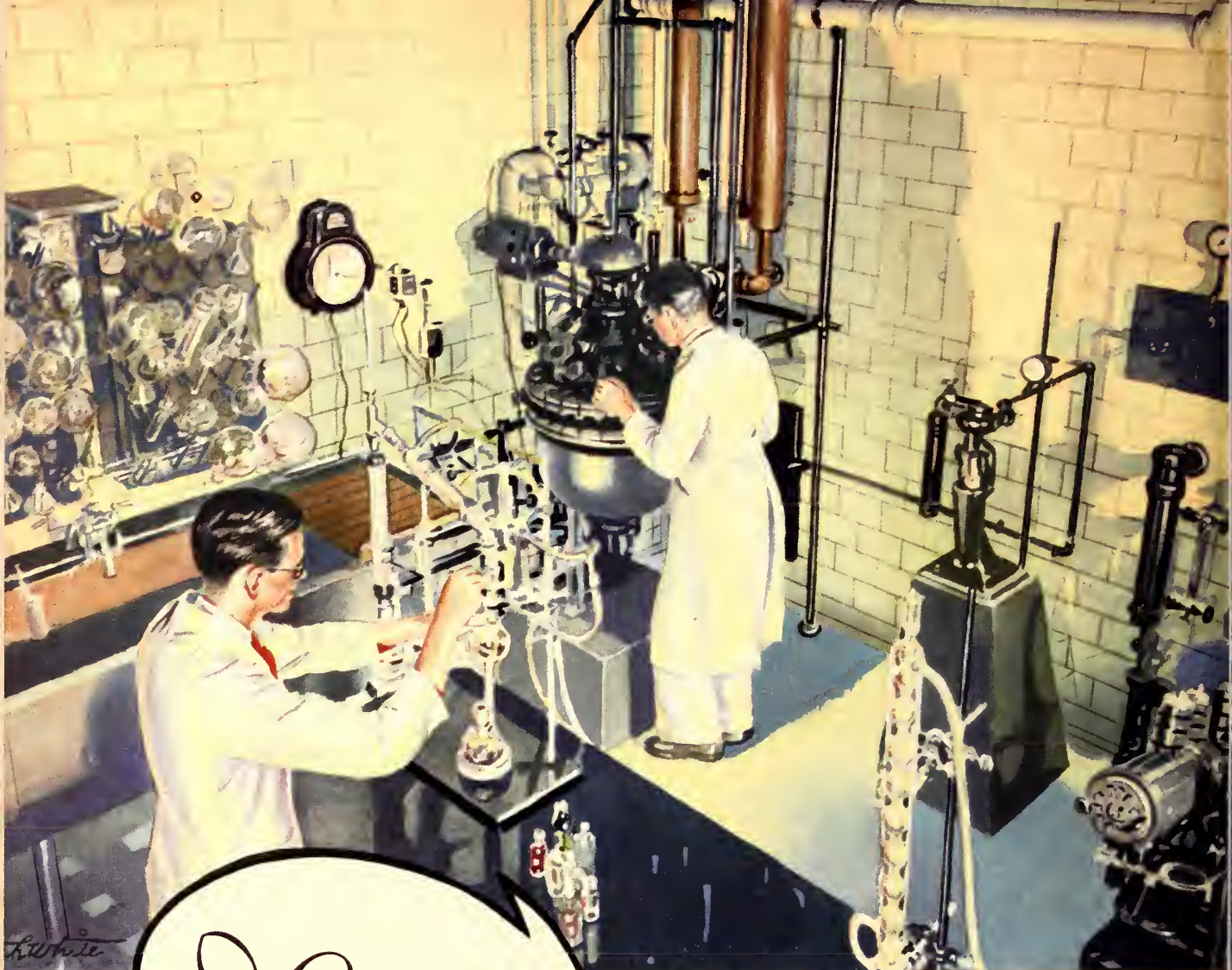


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VOL. XX.

NOVEMBER, 1936

No. 11

ANNUAL SUBSCRIPTION \$2

SINGLE COPIES 25 CENTS

Entered at the Postoffice at Phoenix, Arizona, as second class matter.

"Acceptance for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized March 1, 1921"

EMERGENCY TREATMENT OF FRACTURES

E. PAYNE PALMER, M. D., F. A. C. S.
Phoenix, Arizona

(Read before the 54th annual session of the New Mexico Medical Society, Carlsbad, N. M., May 6-8, 1936; and before the 45th annual session of the Arizona State Medical Association, April 23-25, 1936.)

Emergency treatment should begin at the place and time of an injury. Fractures are emergencies and the initial treatment is most important. **"Splint them where they lie"** and avoid rough handling; many simple fractures have been made compound and irreparable damage done to soft parts through improper handling.

It is up to the medical profession to see that fracture cases receive proper first aid treatment so as not to receive additional injury through the handling of well meaning but inexperienced persons. The medical profession must realize the need of fixed traction of fractures for transportation and insist that it be generally used. Every doctor should be well trained in first aid and fixed traction so that he can instruct the general public in the methods. All physicians should actively assist in promoting the giving of better first aid to fracture cases.

Through training of laymen who live at strategical points, in the use of fixed traction fracture cases may be transported without further harm to where further proper treatment can be given. The time of recovery may be thereby reduced with an average saving of \$100.00 in the treatment of each extremity fracture. Were this method universal in the United States it would result in a saving of approximately \$30,000,000.00 a year.

The "first aiders" must understand that their services are strictly emergency measures, carried out in the absence of physicians prepar-

atory to medical care which must be given as soon as possible. Every injured person must be seen by a physician.

The Kellar-Blake hinged half ring splint with web strap and buckle for the lower extremity and the Thomas-Murray hinged splint for the upper are the simplest and most convenient for the emergency treatment of fractures of long bones. They should be standard equipment, of every ambulance, for every highway patrolman and of every industrial plant, mine, construction crew, etc., wherever fractures are apt to occur. When these splints are not available the fractured extremity can be placed on a pillow and side splints applied, held by straps, bandage, cloth or rope. If pillow and splints are not to be had, a fractured upper extremity can be bound to the side of the body and a lower to the opposite limb.

Even the simplest fracture deserves proper first aid attention. The general practitioner treats the majority of fractures; he should equip himself adequately to handle those which he is capable of treating and he should recognize early those which he is not equipped to treat. The physician who accepts a fracture case should be held responsible for the end results and not the orthopedist nor the surgeon who sees the case when failure is imminent.

A patient in shock should not be transported great distances; put him in a warm bed in the house nearest to the site of the accident and keep him there until he recovers from shock; during this time, disturb him as little as possible.

Shock of some degree exists with all fractures and should always be looked for. Many lives have been sacrificed through subjecting injured persons to the shock of reductions before recovering from shock of the injuries. The emergency treatment should combat shock and relieve pain. Only then may a careful, general physical examination of the patient be made or radiography considered.

The suspected fracture area should be examined for injury — abrasions, contusions, and cuts of the skin, muscles, nerves, tendons, and blood vessels. If there is a fracture of a long bone, comparative measurement of the length of the two limbs should be made and recorded. Roentgenograms of all fractures should be obtained before and after reduction. They will determine the site of the fracture and whether simple, comminuted, oblique, spiral or transverse, and whether the parts are in good position or angulated or overlapped.

Reduction should be undertaken as soon as the patient reaches favorable surroundings, and after a correct diagnosis is established and the proper equipment and necessary assistance is secured. Reduction is usually relatively easy if undertaken within a few hours after the accident, while muscle spasm is still acute and before it has become fixed. It is unsatisfactory to attempt reduction without an anesthetic which may be local, general, or spinal, as indicated.

Treatment of fractures should center more upon local findings and careful handling of the injured parts, than upon the general metabolism of the individual. The early replacement of the bone ends in as nearly perfect apposition and alignment as possible with immobilization to protect the matrix is essential for normal repair. Injuries to soft structures should be given proper attention before or after reduction. Every injured tissue should be restored to as near normal as possible.

Reduction of fractures is effected by manipulation, traction and open operation. Painstaking attempts to reduce fractures by manipulation and traction as a closed procedure should be made. The indications for open reduction of fractures are positive in only a few cases. If it is impossible to reduce a fracture so that good functional result reasonably can be expected, then it is permissible to perform an open reduction. Open reductions should only be performed by those trained and equipped to do bone surgery under the most perfect asepsis and technique. Metal bands, nails, plates or screws may be required to hold the bone ends in position but not as a routine.

Compound fractures should be treated conservatively, whenever possible. A wound should be covered immediately with sterile

compresses while a wide area of the surrounding skin is thoroughly scrubbed with hot water and soap stroking away from the wound. Then the wound, including protruding bone ends and surrounding skin should be treated with ether. Strong antiseptics should not be used. They prevent healing and favor infection. Lever the bones back into position and immobilize. Bone fragments are to be cleansed and replaced in as near normal position as is possible but foreign material should not be introduced to maintain the fragments in position. Debridement must be thorough; traumatized margins of skin fascia, muscle and fat should be cut away and active bleeding should be stopped and severed tendons be sutured. If the wound is not more than 6 hours old it may be closed safely with a through suture; if beyond this period, temporary drainage is advisable. Prophylactic tetanus antitoxin should be given after making the skin test for sensitization.

The choice of splints must rest with the physicians. I believe that plaster of Paris is the best material for external splints. Learn to use plaster of Paris properly and you will have the same feeling toward it. It can be molded to fit the injured parts more satisfactorily than can ready-made splints. Splints should never be applied with the idea that they will correct deformity, but should be used to retain the fractured bones in the position obtained after reduction.

Traction by mole skin, the Kirschner wire or the Steinmann pin are frequently required to obtain and maintain alignment and apposition of the fractured ends and fragments. When a strong pull must be exerted and long time traction is anticipated, skeletal traction is very much more desirable. Properly applied it can be left on as long as necessary. A Kirschner wire or Steinmann pin can be chosen according to the experience of the person treating the case. The amount of the weight will depend upon the pull required and the results as shown by radiography. Just how long a fracture should be retained in splints or under traction should also be determined by radiography. Too much manipulation of a fracture interferes with healing and frequently results in non-union.

Roentgenograms should be taken frequently

enough to determine the callus and bone formation. Support must not be removed from a healing fracture until bony union has occurred. Even after bony union appears complete, deformity may result if retention is removed too early. Lower extremity fractures should always be protected by a retention splint, preferably walking caliper for fractures of the femur, until firm bony union is established. Late weight bearing should be the rule in these cases.

A mistake frequently made is to continue fixation too long after bony union is complete, allowing the joints to become ankylosed and the muscles to lose their tone and elasticity. Active motion not producing pain, will greatly aid and hasten functional restoration of the joints and soft parts. Forced passive movements of healing fractures and adjacent joints should never be countenanced.

Every individual or hospital accepting fractures should provide both promptness and thoroughness. The care of fractures should be closely supervised by those thoroughly trained, and deeply interested in the end results.

CONCLUSIONS

Fractures are emergencies and treatment should begin at the place and time of the injury.

Since first aid for fractures is usually given by laymen, the medical profession should train certain laymen in first aid and fixed traction method for transportation of fracture cases.

The general practitioner should be encouraged to equip himself to handle adequately, uncomplicated fracture cases.

The treatment of shock is of first importance.

A careful painstaking examination should be made in all cases.

The treatment of a fracture should be centered more upon the local findings and immediate careful handling of the injured parts, than upon the general metabolism of the individual.

Use closed reductions when possible, and open reductions only if it is impossible to reduce a fracture to a place where good functional results can be reasonably expected.

Compound fractures must have the most scrupulous care to obtain satisfactory results.

Plaster of Paris is the best material for ex-

ternal splints. Mole skin or skeletal traction are frequently required to obtain and maintain alignment and apposition of the fractured bone ends and fragments.

Roentgenograms are necessary before and after reductions and throughout the entire period of the treatment of fractures.

Support must not be removed from a healing fracture too soon and fixation must not be kept up too long.

The care of fractures should be closely supervised by those thoroughly trained, experienced and deeply interested in the end results of fractures.

MANAGEMENT OF HEAD INJURIES

C. C. NASH, M. D.
Dallas Texas

(Presented before The New Mexico Medical Society, at its 54th annual session, at Carlsbad, N. M., May 6-8, 1936.)

All cases of head injury suffer from shock, the degree depending upon the severity of the brain damage. Shock is manifested by lowered body temperature, weak pulse, low blood pressure, vomiting and slow and shallow respiration. The pulse may be fast or extremely slow—below 50 to the minute. This, in my experience, is a grave sign. The diastolic blood pressure is of more importance than the systolic, as in severe injuries the systolic may be around 100 with the diastolic naught.

The first consideration in the treatment of shock is to lower the head and apply external heat to the body and extremities. The second is control of hemorrhage from wounds of the scalp. The hair should be hurriedly clipped, the wound slopped with 5 to 10% mercuriochrome and closed with skin clips. These measures can be effectively carried out in the patient's room. A patient with a severe type of head injury should never be carried to the emergency room as surgery other than that above mentioned is contra-indicated. In this day of high speed travel, injuries to the extremities and pelvis are common complications, but they are secondary considerations as it is exceptional for any of them to result fatally and no attempt should be made to reduce a fracture until shock has subsided.

During shock from a head injury there are a few don'ts that should be emphasized.

Don't expose the patient. Stripping the patient reduces the body temperature and adds to the shock. An exception is when the patient's clothes are wet. The clothes should then be cut away and warm blankets applied next to the skin.

Don't give morphine. It should not be necessary to emphasize this; but it is still used by some doctors. Morphin depresses respiration and above everything else it masks symptoms and one cannot tell whether the patient is comatose from injury or morphine. An exception may have to be made in the occasional exceptionally wild and restless case.

Don't give glucose for the reason that it further lowers intracranial pressure and if there is intracranial bleeding the hemorrhage will be increased.

Don't give hypodermoclysis. This only adds to the body fluids and increases the onset of cerebral edema. If the patient has lost much blood replace it by transfusion.

Don't do a spinal puncture as it increases the shock and by removing spinal fluid increases intracranial hemorrhage.

Don't elevate the head of the bed. The head should be lowered to increase the blood volume in the head, thus allowing an increased amount of venous blood to flow through the respiratory center. The head should be kept low until all signs of shock have subsided and then the head should be placed on a level with the body. This position should be maintained until the patient is well on the road to recovery.

Don't do surgery during shock. Broken bones can be set later, perhaps not as nicely, but it is much better to have a living patient with a crooked limb than one in the cemetery with perfect reduction of a fracture. Tying of bleeding vessels and clipping wound margins in apposition is permissible.

Don't conduct an elaborate examination as this can well wait until shock has subsided, and **don't x-ray the patient.**

The things that should be done are, recording the patient's temperature, respiration, and blood pressure every hour until shock has subsided. This usually requires from 6 to 12 hours, at the end of which time the patient can

be safely examined. If the injury is so severe that there is no response to treatment, death usually takes place in this time.

After shock has subsided a **careful neurological examination** should be done.

Compound fractures may be obvious, though they can be overlooked in a hairy scalp. Depressed fractures can seldom be diagnosed at this time due to swelling. Well made x-ray films are usually necessary.

Rupture of the middle meningeal artery is rare in our experience—occurring in about 1% of cases. It is followed by a gradually developing hemiplegia and coma. There is seldom a lucid interval following injury. The patient does not arouse from the period of unconsciousness following injury and within a few hours paralysis of one-half the body is detected. In patients in deep coma following head injuries the diagnosis of hemiplegia sometime is extremely difficult as the deep reflexes are abolished and the Babinski is nearly always bilateral from the greatly increased intracranial pressure. A dilated pupil is nearly always on the side on which the hemorrhage has occurred. It is thought by many that if an x-ray film shows a fracture line across the groove of the middle meningeal artery a rupture of this artery may be suspected; the artery can be torn without skull fracture. The dura is usually not torn and the blood dissects the dura from the skull, the artery continuing to bleed until clotting occurs in the torn artery. It has been our experience that if care is exercised in removing the clot and the stump of the artery is not disturbed that further bleeding does not occur.

An interesting recent observation is that of **extra-dural hematoma** in the posterior fossa producing alarming symptoms of high temperature, rapid pulse, irregular respiration, etc. A linear fracture has demonstrated by x-ray film almost in the mid-line of the occipital bone, and this region was explored. A thick firm clot was found between the bone and the dura. This was removed and the bleeding apparently had come from a diploic sinus which began to bleed anew but was rapidly controlled with wax. The dura was opened, but nothing of note was found in the basilar cistern. A drain was inserted and wound closed. His general condition soon became better and he

rapidly recovered, except his mind is somewhat clouded.

A large collection of **blood in the subarachnoid space** may cause hemiplegia and unless operated early grave danger of permanent crippling exists. Likewise hematoma may occur early in the subdural space. I believe it is almost impossible to diagnose a subdural hematoma at this time. They frequently cause no symptoms for months or years when they may be mistaken for intracranial tumor.

Contra-coup fractures of the skull are rare, but contra-coup injuries of the brain are common. This is particularly true in falls from a height or in accidents from high speed automobiles. These injuries are frequently lacerations of the cortex followed by hemorrhages over large areas. If a large artery is torn death always results in a few hours, but venous bleeding usually stops when the intracranial pressure sufficiently increases.

Aphasia is annoying and may be the only disability. It may be accompanied by a homonymous hemianopsia and is always due to injury of the left temporal lobe. Loss of memory and inability to read or to understand the written word may further complicate matters.

Convulsions are fairly common in severe head injuries in children, but rare in adults. They may be jacksonian in type, but more frequently are generalized.

Mental changes amounting to acute insanity may occur immediately following recovery of consciousness. It is rare and I have only had 3 such cases and strange to say each had a linear fracture of the occipital bone. In all probability there was contra-coup injury of the frontal lobes, though repeated careful neurological studies did not show the usual signs of frontal lobe lesion.

Subial hemorrhage may occur over large areas of the cortex and if over the region of the fissure of Rolando produce great restlessness and hypersensitiveness. This restlessness may be so extreme that the patient dies from exhaustion in spite of large doses of sedatives, hypnotics, etc.

Hemorrhage in the sub-arachnoid space occurs in practically all severe head injuries whether accompanied by fracture of the skull or not. This is shown by a spinal puncture.

Bleeding from an ear may point to a fracture of the corresponding petrous bone. Es-

cape of cerebro-spinal fluid is diagnostic but in my experience rare. I have never seen bleeding from the ear alarming from the loss of blood and usually it ceases after a few hours. It has seemed in a number of cases to be life-saving. Escape of spinal fluid through the nose is serious and may result in meningitis and death.

Fractures of the anterior fossa produce enormous hematoma in the orbital fossae resulting in great edema of the lids and cheeks so that for days the patient is unable to separate the lids. The sense of smell may be damaged or even destroyed. Bleeding from the nose may be profuse and in comatose patients the blood may fill the bronchial tree causing death. Various palsies of cranial nerves may be seen. The most common is a unilateral 6th nerve palsy resulting from direct pressure of the post-inferior cerebellar artery on the nerve. Peripheral paralysis of the 7th nerve results at times from the fracture through the petrous bone. Another curious type is bilateral paralysis of the 6th and 7th nerves without involvement of other cranial nerves or loss of pain and temperature sense in the body.

X-ray films in "stereo" and in 3 directions should be made when possible. **Never is x-ray film of a head an emergency.** They are of little practical value, except in depressed fractures but are of inestimable value in medico-legal cases.

After the examination is complete a **spinal puncture** should be done and the spinal fluid pressure carefully measured with either a mercury or water manometer. I use the mercury because it is convenient to carry around and much simpler to sterilize. The normal pressure with Fleischer instrument is 6-8 mm. of mercury. If the pressure is increased sufficient fluid should be removed to lower the pressure to one-half the initial reading. This procedure should be carried out with the patient lying on one side. A liberal amount of 1% procaine solution should be used as a local anesthetic. When done in this manner no harm results and it is of great value in treatment.

All compound fractures and all **depressed ones** whether simple or compound and **all cases showing localization** signs of pressure over the cortex should have appropriate surgical measures. For the compound fractures debridement and if comminuted or depressed

the removal of fragments and elevation or removal of depressed bone should be done. Those showing localizing signs can usually be cared for through subtemporal decompressions.

A large percentage of **head injuries** shows **no** localizing signs and it is this that has caused such a voluminous literature on head injuries during the past 15 years. The temperature may rise rapidly and is usually a grave sign. It may rise rapidly for a few hours and then gradually drop to normal; an occasional case will recover where temperature has reached 106. Profound coma and rapid pulse with high temperature usually mean fatal outcome. There is another type of case whose description is atypical of what was described many years ago as fractured skull, viz: unconsciousness, deepening into coma, irritability or hypersensitiveness the patient pulling away from the examiner and resisting passive movements, a pulse that gradually becomes slower so that at 48 to 72 hours following injury may be as low as 40. The temperature remaining around normal or slightly above, the blood pressure goes up to 130-150 and the spinal fluid is bloody with pressure from 20 to 30 mm. of mercury. These are signs of medullary compression and unless soon relieved the edema of the brain extends into the medulla with fatal results. Unless relieved the pulse rate begins to increase and the temperature to rise so that in from 12 to 24 hours the temperature reaches 104 and pulse 130 to 160. If the case is allowed to go this far it is usually hopeless.

Another type is where the pulse is fast on admission accompanied by a temperature of 102-103 and frequently by great restlessness and profuse sweating. The nails and lips are cyanotic and respiration rapid. The blood pressure is usually about normal or below. The blood pressure should be taken frequently and I do not lay a great deal of stress on it as it varies so much. However a falling blood pressure is of grave significance.

TREATMENT

Rest: The patient should be kept flat in bed while unconscious, but when awake a pillow may be used if desired. The restless patient should be given sedatives in the form of bromides and chloral hydrate by mouth or by rectum. If this will not suffice luminal or nembutal may be given. If he cannot be controlled otherwise morphin may be given. Physical re-

straint should never be used as it is much easier on the patient to allow him to get up and walk about the room. The only extremely wild cases I have had to recover were allowed to do this as it was not nearly so exhausting as the continual fighting.

Spinal punctures should be done in all cases and if the pressure is above normal it should be reduced one-half. Draining all the blood fluid possible is a dangerous practice. Increased intracranial pressure is not due to increased spinal fluid, but to cerebral edema. The puncture should be repeated in 12 hours and continued until the fluid becomes clear or the pressure drops approximately normal. In severe cases the puncture may be repeated oftener, but continuous drainage of the spinal canal should not be done on account of the danger of herniation of the cerebellum into the foramen magnum.

Cerebral edema sets in soon after injury and rapidly increases in severity. It usually does not become manifest under 6 hours. When the spinal pressure is high and the patient comatose or vomiting persistently glucose is given intravenously—50 to 100 c.c. of the 50% solution. It may be repeated in 6 to 8 hours. Glucose in this amount and strength causes rapid shrinking of an edematous brain. Every neurosurgeon has been able to demonstrate this beautifully in operation for tumor. This may be kept up until the patient shows signs of improvement. I do not give it routinely to all head injuries, but reserve it for above indications.

Magnesium sulphate is a valuable remedy for combatting edema and in many cases is all that is needed. It may be given by mouth or by rectum and when fluid intake is restricted excessive purgation will not occur. It is our practice to give 1 ounce by mouth to conscious patients and from 2 to 4 ounces of the saturated solution per rectum to unconscious patients about every 6 hours.

Restriction of fluid intake is practiced in all cases, but is fraught with grave danger in the dry southwest country. It is our custom to try to keep conscious patients thirsty and never allow them to drink all they desire. If the patient becomes delirious and restless a hypodermoclysis of normal saline solution should be given and I have seen delirium clear up therefrom as if by magic. Children will not

tolerate dehydration and must be given fluids freely.

If the patient is still **comatose** at the end of 48 hours and cannot swallow or strangles when water is put in the mouth a nasal tube is passed and fastened in and the patient given orange juice and water. No food except orange juice should be given a severe head injury case for 3 or 4 days. The amount of fluid given will depend on weather conditions, humidity, etc.

Temperature elevation should be controlled if possible by cool sponges and ice bags to the body and head. A large flat ice bag over the abdomen and another on the chest is usually of assistance. Aspirin in doses of 10 gr. per rectum or by mouth is of great assistance and does no harm.

Stimulants: Caffeine sodium benzoate is a favorite remedy in many hospitals, but I have never seen the least benefit from its administration. It is said to lower intracranial pressure but it does not do so in tumor cases.

Coramin and metrozol are seemingly of help at times, but it seems that circulatory failure is due to injury of the cardiac center and hence the uselessness of the so-called heart stimulants in these cases.

A simple remedy for elevation of temperature that may occur after injury is **raising the foot of the bed**. Frequently the temperature will return to normal and will nearly always be a cure unless the temperature center is injured.

All cases of head injury sufficient to fracture the skull and cause **loss of memory or unconsciousness** and have bloody spinal fluids should be kept in bed at rest for a period of 4 to 6 weeks. However, much difficulty is frequently encountered in doing so unless the case is complicated by a broken pelvis or leg in which case the patient will be content to remain in bed.

After this he should lead a **quiet life**, stay away from crowds and excitement and eat a simple diet and have a bowel movement every day. He should not expose himself to the hot sun and should not attempt heavy work for 6 to 12 months. By rigidly carrying out the measures briefly set out the distressing sequelae of chronic headache, nervousness, change of personality can usually be eliminated and the victim of a severe head injury return to a life of usefulness.

EVALUATION OF DIAGNOSTIC METHODS IN GALL BLADDER DISEASES

JOSEPH BANK M. D.
Phoenix, Arizona

(Read before the 45th annual session of the Arizona State Medical Association, April 23-25, 1936).

The **complete history and physical examination** in diagnosis of gall bladder disease is important. Of equal importance is the investigation of clues concerning symptoms caused by the stomach, duodenum, colon, and pancreas, which may at times simulate those from gall bladder disease. Nor can any other group of organs be omitted from a complete history. In general gall bladder symptoms occur at a considerable time after food ingestion; they are indefinite and not relieved by food or drug ingestion as are ordinary gastric or duodenal lesions.

The **symptoms of acute gall stone colic** are typical. The pain may be in the epigastrium, upper right quadrant, or may radiate along the costal margin to the right scapula. The presence and degree of jaundice depend upon the location of the stone. Cholecystitis without stone may appear just as acutely as the calculous variety but with less severe pain. The patient complains of pain, distress, nausea, vomiting, and anorexia. It is significant that the symptomatology is variable.

The **chronic gall bladder** differs from the acute in that it may be absolutely silent. Those gall bladder symptoms due to infection and which resemble symptoms from other foci of infection are receiving added attention. The patient may suffer from excessive fatigue, insomnia, pain in the joints or muscles, or neuralgias. The appetite is often poor. Migrainous types of headache are not uncommon. Colon disease in the form of spastic colon, constipation, or catarrhal colitis is often associated with cholecystitis. Of even greater importance is that disease of the colon may resemble cholecystitis and be mistaken for it. So-called flatulent dyspepsia is the most common single symptom of chronic gall bladder disease. The typical syndrome of this indigestion consists of post prandial epigastric distention, bloating, and belching. The upper

abdominal discomfort may resemble duodenal ulcer. Duodenal ulcer or duodenitis may co-exist with chronic gall bladder disease.

Localized tenderness and rigidity are outstanding signs. Tenderness in the upper abdomen due to spastic colon, or of the abdominal wall without visceral disease is frequent. The sensibility of the patient is a factor which must be taken into consideration in abdominal palpation.

Hyperbilirubinemia may be present in both acute¹ and chronic² non-calculous cholecystitis. The diseased gall bladder in itself produces no jaundice. The associated phenomena believed by most investigators to be responsible for jaundice are hepatitis, intrahepatic cholangitis, and pancreatitis. In calculous cholecystitis hyperbilirubinemia is much more common because of the greater likelihood of obstruction in the biliary ducts. Jaundice, when it is present, is a great diagnostic aid because it focuses attention on the biliary tract³. Clinical jaundice does not occur in many patients with gall bladder disease.

It is in such cases that the quantitative determination of serum bilirubin is of value in demonstrating the existence of latent jaundice. The 2 methods in greatest use for this purpose are the icterus index and the quantitative van den Bergh. The proper use and interpretation of these tests preoperatively will do much toward reducing the mortality and morbidity of gall bladder surgery.

The **quantitative van den Bergh** is superior to the icterus index for the determination of serum bilirubin. The result of this method is usually reported in mgms. per 100 c.c. Values below .8 mg. are normal; a concentration of 2 mgms. means frank tissue jaundice. This is the only accurate means of determining the degree of latent jaundice. It is of much greater value than examining the urine and stool to determine the severity and variations of the jaundice. The degree of hyperbilirubinemia gives an idea of the type of jaundice. In hemolytic jaundice values above 6 mgms. are unusual. In incomplete obstruction values above 15 are strong evidence of associated intrahepatic pathology. In liver jaundice the degree of hyperbilirubinemia is usually suggestive of the severity of the hepatic lesion. Variations in a series of determinations have distinct prognostic value.

The **icterus index** gives the comparative degree of jaundice in units. The normal index ranges from 4 to 6. Latent jaundice is indicated by values from 7 to 15. With values above 16 jaundice is visible. This method is simple and easily performed. There are certain objections to this test to be borne in mind when interpreting results. The needles, tubes, and syringes must be scrupulously clean and dry. Even a slight degree of hemolysis from collecting the specimen will produce considerable error. Another source of error may be a discoloration of the serum from food rich in carotene⁴ and xanthophyll. These foods are carrots, spinach, pumpkin, oranges, eggs, and other common articles of diet. It is therefore often necessary to supplement the icterus index with chemical determination of the bilirubin or the van den Bergh method.

The **bromsulphthalein** test is primarily a test of liver function; but as a result of recent studies it has acquired distinct diagnostic and prognostic value in gall bladder disease. It is now known that the dye retention occurs not only in gall bladder disease associated with jaundice, but that retention is frequent in calculous disease out of all proportion to the degree of serum bilirubin. Dye retention of 5 to 8% at the end of 30 minutes in a series of patients with non-calculous cholecystitis occurred with normal values of serum bilirubin. The dye and pigment excretion functions of the liver may be dissociated. The hepatic disorder indicated by faulty dye elimination is functional and is secondary to disease of the gall bladder. The bromsulphthalein test is of great value in judging operative risk regardless of the degree of latent or visible jaundice.⁵ Appropriate medical measures will often restore normal liver function preoperatively.

Cholecystography is the most valuable single laboratory diagnostic method. The oral method of administering the dye is commonly used because of its ease, but the intravenous method still has its place if normal absorption of the dye is impossible, or as a check upon the oral method. Cholecystography demonstrates anatomical abnormalities and deviations from normal function. The normal gall bladder visualizes distinctly at the standard time, concentrates the dye properly, and empties within the accepted time. The cholecystographic criteria of the pathological gall bladder are faint

visualization of the gall bladder, non-visualization or no shadow, cholelithiasis and distortion of the gall bladder outline.

Faint visualization is merely a degree of gall bladder deficiency of which non-visualization is the complete expression. It represents stages in impairment of concentration function which is difficult to appraise, and therefore leads to error in interpretation. If the bile enters the gall bladder faint visualization indicates a thickened or diseased gall bladder wall or a loss in the power of concentration, the result of acute or chronic cholecystitis. Faint visualization is much more significant when the dye is given intravenously.

Non-visualization is usually caused by cystic duct obstruction, the common cause of which are gall stones. There, however, may be non-visualization in spite of a patent cystic duct. The causes for non-visualization are numerous. There may be adhesions or outside pressure. Within the gall bladder may be cholecystitis, abnormally thickened wall, viscid or tarry bile, or complete packing of the gall bladder with stones of the non-opaque type. Disturbed physiology of the sphincter of Oddi may prevent the bile's entering the gall bladder. That colon disfunction may prevent an apparently normal gall bladder from filling has been pointed out recently. The same observer⁶ also showed that after correcting the colon disturbance normal visualization occurred. Causes outside the gall bladder include hepatitis, cirrhosis, and defective liver function for other reasons. In addition, duodenal ulcer and pyloric obstruction may be responsible—in oral administration only. The latter is a likely source of error when gastric or duodenal disease is unsuspected.

Gall stones are visualized in the demonstration of positive or negative shadows. Infrequently, the gall bladder mucosa may concentrate dye well enough to hide non-opaque stones with the dye.

Distortion of the gall bladder outline may be intrinsic or extrinsic. Such deformity must be in varying positions to be of significance. Simultaneous visualization of the gall bladder and stomach or even the colon and noting the relationship between these organs is of value.

Cholecystography has an accuracy of 80 to 97% and of the normal gall bladder 74% correct. In another series of proven gall stones

at operation the cholecystography showed abnormal findings in 98% but stones were visualized in only 30%. The no-shadow sign is therefore a most important finding but must be interpreted with caution. The normal cholecystogram is the least reliable of all signs. Cholecystography requires greater care than most other diagnostic procedures because of possible errors in technique and interpretation.

Biliary drainage as devised by Lyon,⁸ and performed by a competent observer offers, at times, more precise diagnostic aid than does any other procedure. The bile obtained is examined grossly, microscopically, and bacteriologically. The examination of bile in biliary tract disease is as important as the examination of urine in kidney disease. The finding of cholesterol crystals and calcium bilirubinate pigment is pathognomonic of gall stones.⁹ The finding of either is 90% diagnostic of stone. The cholesterol crystals are characteristically square or oblong with a corner clipped off in the form of a perfect right angle. The pigment appears as a lustrous precipitate, varying from pale yellow to golden orange. Normal bile contains very few leucocytes. Abnormally the leucocytes may be increased or pus may be noted. Abnormal cellular exfoliation is indicative of an inflammatory process in the gall bladder ducts or duodenum. The cells differ with their origin. Bacteria in clumps, especially when found in "B" bile or gall bladder fraction, suggest infection of the gall bladder. Normally bile is obtained in three different fractions, "A", "B", and "C", corresponding to duct, gall bladder, and liver origin. The fractions vary in color and viscosity. The failure to obtain gall bladder bile on repeated examinations is indicative of gall bladder pathology. The significance of this finding is analagous to the failure of obtaining a gall bladder shadow on cholecystography. Bacteriological study of the bile, if done with care, is becoming increasingly useful in isolating organisms from the biliary tract.

Many interesting observations have been made as a result of **comparative studies of bile drainage and cholecystography** in a series of patients with gall stone disease proven at operation. In a group of 44 cases¹⁰ the gall bladder at operation was judged capable of function; there was no undue thickening or fibrosis, no

adhesions, and the cystic and common ducts were patent. In this group 49% showed persistent function by drainage, 16% by intravenous cholecystography, and only 3% by oral cholecystography. In the same group biliary drainage demonstrated cholesterol crystals or pigment, or both, in 93%. Intravenous cholecystography visualized gall stones in 58%, and oral cholecystography in 29%. In 30 cases the gall bladder was judged to be non-functioning at operation due to cystic duct obstruction, thickened fibrotic gall bladder, bound down by adhesions, or otherwise diseased. In this group bile drainage showed crystals and pigment in 48%. The intravenous dye administration showed definite stones in 19% and the oral in 12%. Non-function of the gall bladder by failure to obtain "B" bile was indicated in 69% of the bile drainages. Intravenous cholecystography showed non-visualization or faint visualization in 95% and the oral method in 94%. In common duct stone biliary drainage is greatly superior to cholecystography. The reasons for this are that usually sufficient bile can be evacuated by drainage to show cholesterol crystals and pigment, cholecystography is not feasible in the presence of jaundice, and the liver may not be able to excrete enough dye to visualize the gall bladder.

Comparison of diagnostic procedures is difficult. Both cholecystography and bile drainage have attained a high degree of diagnostic accuracy in the hands of competent individuals. These data show, not that one procedure is more useful than the other, but that both have their fields of usefulness in the diagnosis of gall bladder disease. The use of both methods will produce a higher degree of diagnostic accuracy than will either alone. If the diagnostic methods fail to agree, a re-check is in order, especially if surgery is contemplated. The use of all diagnostic aids is necessary not only for diagnosis but also to determine the fitness of a patient for surgery. Accurate diagnosis calls for the elimination of pathology elsewhere in the body to account for all the causes of indigestion.

That **non-calculous cholecystitis** exists there can be no doubt, but not as commonly as is generally believed. Some surgeons are not eager to operate in such cases. Patients of this type are apt to have recurrence of symptoms

following surgery. Both internists and surgeons are not so eager today to advise surgery unless they are strongly of the opinion that the gall bladder is of no use to the patient. A non-functioning gall bladder by cholecystography and several bile drainages means gall stone disease in 90% of the cases.

CONCLUSIONS

The history and physical examination are as important in the diagnosis of gall bladder disease as they always have been.

The serum bilirubin determination and the bromsulphthalein test aid in the diagnosis of gall bladder disease.

Cholecystography is probably the single diagnostic procedure of greatest aid in the diagnosis of gall bladder disease. No one method can be considered a short cut to diagnosis.

In the hands of some, the results of biliary drainage in the diagnosis of gall stones have attained a degree of perfection comparable to those obtained by others equally skilled in the use of cholecystography. It must be performed accurately and repeatedly. Bile microscopy is of the utmost importance in the diagnosis of gall stones.

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Discussion

DR. V. G. PRESSON: I feel that Dr. Bank has brought us a subject of great interest and importance. He has thoroughly covered the ground. One point that he stressed may well be repeated. A complete diagnosis will suggest the proper therapeutics. Dr. Bank has ably evaluated laboratory diagnosis. If the gall bladder is shown by either duodenal drainage or blood chemistry to be irreparably damaged, or that it is causing infection of the liver, then most certainly surgery is to be considered. Many cases clear up in response to medical treatment. Surgery has not proved to be the panacea claimed for it not so many years ago. The degree of involvement of the gall bladder and liver will determine whether the treatment is to be medical or surgical. By all means use medical treatment if at all possible.

Functional disturbances suggest mal-position of the gall bladder, peptic ulcer and chronic appendicitis; things of this nature must be taken into consideration if we wish not to be fooled and call a condition cholecystitis when it is not.

I wish to compliment Dr. Bank upon his most excellent paper.

DIFFERENTIAL DIAGNOSIS OF GALL BLADDER DISEASE

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(Presented at the First Harlow Brooks Memorial Navajo Clinical Conference, Sage Memorial Hospital, Ganado, Arizona, August 31, 1936.)

Cholelithiasis was identified first in 1500 B. C. and the first description of gall bladder attacks was written in 1554. In 1654 Gleason demonstrated the nerves of the liver and their capsules and the walls of the ducts. In 1708 Ettelmuller recorded extremely accurately this condition and noted its relationship to pregnancy.

The first surgical drainage of the gall bladder in this country was done by Baggs of Indiana in 1867 and the first cholecystectomy was by Longingbuck of Germany in 1882. Gall stones were first identified by x-ray film in 1888. Prior to 1724 x-ray of the gall bladder was not satisfactory. Since that time x-ray visualization of the gall bladder by the Graham Cole technique has given fine results.

The gall bladder has the ability to concentrate, secrete and contract. The ability of the gall bladder to concentrate results in its being able to concentrate hepatic bile 6 to 10 times thereby storing considerable hepatic bile. If the gall bladder is prevented by disease from concentrating bile, then its function of storing bile is seriously interfered with.

There are 2 types of gall bladder contractions; the first is the slow, irregular tonic contraction lasting from 5 to 30 minutes and produced in part by stimulation by cholecystokin and in part by reflex nervous mechanism. The second type is atonic rhythmic contraction and relaxation at the rate of 2 to 6 times a minute.

Fats such as cream and egg yolks are effective stimulators of the gall bladder contractions; protein, are moderately effective and carbohydrates practically ineffective.

In the diagnosis of gall bladder disease a carefully taken history is important. The location of the pain, character of its radiation, and relation to meals are all important. It is estimated that approximately 35 to 50% of all persons past the age of 40 have disturbances of the biliary systems. Approximately 50% of the

patients are between the ages of 40 to 50 years. Women are affected more often than men; the ratio is about 4-1. Attacks of biliary disease in women are particularly prone to occur during or shortly after termination of pregnancies.

The chief symptoms of chronic cholecystitis are due to gastric disfunction and consist of various symptoms as: gas on the stomach, sour stomach, belching, heart burn, flatulence, etc. Nausea and vomiting are occasionally observed. Large meals are very distressing. These patients become "choosy" of food as they learn by experience that they can't tolerate certain foods. These foods vary considerably with different individuals.

Acute biliary colic is recognized by sharp attacks of cramp-like pain in the right upper abdomen which frequently radiates back under the left scapula. Nervousness, worry, shock, etc., are especially apt to bring on attacks. Attacks vary considerably in duration and are usually accompanied by nausea, vomiting, a medium rise in temperature and probably slight rise in leucocytes.

Gall stones are usually suspected if the patient is having acute painful attacks and especially if accompanied by fever or followed by jaundice. A complete physical examination is necessary as a number of diseases closely simulate gall bladder disease. In asthenic individuals the gall bladder may be as low as McBurney's point.

Since the advent of the Graham Cole technique for gall bladder x-ray, cholecystograms have been helpful in gall bladder diagnosis. The dyes may be administered intravenously or orally. The intravenous method is preferred by us. No reactions of any consequence have been observed by us when the iso-iodokon is used. When this dye is kept prepared and carefully given it is believed by us to be safe. The oral method has not been as satisfactory from a diagnostic standpoint. In addition patients usually are upset by the dye.

Duodenal drainage according to Lyon's technique is of considerable diagnostic help. In a normal gall bladder, the so-called "B" bile, is dark brown and practically free of leukocytes epithelial cells and crystals. The pathological bile may show cholesterol crystals or calcium, bilirubin crystals, bile stone columnna, epithelial cells in numbers, bile stone mucus, many leukocytes or clumps of bacteria.

Brownish black granular debris is not infrequently observed if much stasis of bile is present.

With careful attention to the above procedures, it is usually easy to differentiate gall bladder disease from other abdominal diseases as appendicitis, chronic peptic ulcer, perforation of peptic ulcer, acute pancreatitis, acute intestinal obstruction, gastric crises or girdle pain of tabes dorsalis, nephritic pain and intercostal neuralgia.

With pain in the epigastric region coronary disease must always be thought of. Careful attention to the physical findings of heart disease, evidence of collapse and electrocardiograph findings are of importance in differentiating this condition.

In the treatment—medical or surgical—of gall bladder disease, accurate diagnoses are necessary. The best results are obtained by close cooperation between the surgeon, internist and roentgenologist.

Biliary calculi, empyema and hydrops of the gall bladder indicate surgery. There is considerable difference of opinion as to the advisability of operating for silent stones. The consensus of opinion, for reasons such as, liability of acute cholecystitis attacks, the ever present danger of acute common duct obstruction, the frequency with which carcinoma of the gall bladder is associated with stones, the danger of intrahepatic infection and damage and a definite increase in mortality rate through delay, is that silent stones should be removed.

Of course, there are diseases such as pulmonary phthisis, thyroid disease, acute respiratory infections, serious heart disorders, etc., which make it unadvisable to do an operation of choice. It also should be kept in mind that surgical results in patients with minimal symptoms of cholecystitis are likely to be unsatisfactory in more than 50% of the cases.

Among the indications for surgical treatment are: long history of cholecystitis, cholelithiasis, repeated attacks of acute cholecystitis, etc. Medical treatment is directed chiefly toward the control of symptoms. Even though the patient is rendered symptom free the gall bladder pathology may still exist.

There are three problems connected with gall bladder disease, namely: infection, metabolism and stasis which must be considered in treatment. Gallbladder infection may be due to

any one of a variety of organisms but the chief are streptococci, and the colon and typhoid bacilli. Infection is almost always secondary to other foci such as those in the bowels, teeth, tonsils or sinuses. Acute cholecystitis often follows acute tonsillitis or dental abscess. Stasis of the gall bladder increases the likelihood of infection and stones. So-called biliary dyskinesia and functional disturbance of the biliary tract is commonly associated with stasis.

The disturbance of cholesterol metabolism is probably an important factor in the formation of stones. The source of cholesterol is both endogenous and exogenous but the chief source is foods. Foods, as yolk of eggs, fat of meat, fatty fish, cream and certain vegetable fats contain much cholesterol. There is a definite rise in blood cholesterol the last few months of pregnancy and for several weeks following delivery. The "strawberry" gall bladder, according to Boyd, is the true early cholesterol gall bladder.

A strict dietary regime is important in medical treatment. The diet has to be individualized. The overweight individual should have restriction of calories and the underweight an increase. The patient with stones should have a high carbohydrate but a low fat diet with frequent feedings in order to keep the gall bladder at physiological rest.

The patient with a poorly emptying gall bladder should have a high fat diet to stimulate contractions. In general, the diet should be bland and non-irritating, eliminating greasy foods, rich, highly seasoned foods, roughage, candies, cakes, pies and pastry, etc.; as these patients are usually constipated the diet should be of a laxative nature.

General measures such as proper hygiene, rest after meals, regular meals, exercise, removal of infections, freedom from mental strain, worry, nervousness, etc., are important. Cholagogues such as Glauber's salts, sodium phosphate, Rochelle salts, aloes, and bile salts are of value. Decholin given intravenously in doses of 10 c.c. of 20% solution daily or weekly or orally 1 tablet 3 times a day is of value. Mild laxatives may be needed, calomel being of considerable help at times. Atropine and belladonna often decrease the colonic spasm and relieve troublesome flatulence.

Young has recently reported the use of sodium tetraiodophenolphthalein in 3 grain

doses t. i. d. 30 to 60 minutes before meals in courses of 10 days each. During acute attacks sedatives are given as needed.

Non-surgical biliary drainage through the duodenal tube according to the technique of Lyon is of considerable value. The gall bladder is drained at weekly intervals until normal bile is obtained. The patient's symptoms are then greatly improved if not entirely relieved. This procedure is not advisable if stones are present.

The pre-operative care of surgical cases is important. The routine use of high carbohydrate, low fat diet, glucose intravenously and rest are important. These measures will greatly improve liver function. Blood transfusions are of value if there is a possibility of hemorrhage or if anemia is marked. Calcium orally and intravenously is also a help if there is a tendency toward hemorrhage.

Rahep and associates following the suggestion of Linter claim that an increase in the sedimentation rate of red blood cells above 40 mm. at 30 minutes indicates that the patient has obstructive jaundice and will probably have severe hemorrhage. Treatment of these patients is with transfusions, calcium, etc. Reduction of sedimentation rate and infection will probably not have severe hemorrhage during or after the operation.

CLINICAL ASPECTS OF JAUNDICE

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Read before the 54th annual session of the New Mexico Medical Society, May 8-11, 1936.

Jaundice is an exceedingly important symptom—not a disease. Its recognition immediately necessitates a decision as to etiology because on this hinges the adoption of medical or surgical measures. If medical measures are chosen, it is necessary to outline them and to make a prognosis; if operation is decided on, its risks must be evaluated and an attempt made to lessen them.

The nature of jaundice was probably suspected by the early Greeks, and it is reported they were familiar with the production of jaun-

dice by ligation of the common bile duct. This experiment however was first made known to modern science in 1789 by William Saunders, an Irish physician, and the mechanism of obstructive jaundice established. For a long time jaundice was attributed to retention of whole bile. Later, the constituents of bile were recognized, and with this came the realization that the bile pigments played the principal role in jaundice. Virchow was associated with the early investigation of jaundice and through its work on hematin suggested that jaundice might be anhepatogenous as well as hepatogenous. Later, Minkowski and Naunyn in studies on hepatectomized geese, gave further credence to the theory that jaundice was hepatogenous. Whipple was among the first to throw doubt on this idea, and produced evidence that the liver acted only as an excretory organ in the metabolism of bile pigment. Mann and his associates gave finality to this idea and proved on hepatectomized animals that bilirubin accumulated in the blood stream after complete removal of the liver. Van den Bergh, Snapper, and Rich have all contributed much to this field.

Experiments have demonstrated that of the constituents of bile some, such as bile acids, are probably formed in the liver while others, such as bilirubin are formed elsewhere and brought to the liver for excretion. It is generally known that hemoglobin from destroyed red blood cells is broken down to hematin and globin, and that the former is further broken into hemosiderin, an iron-containing compound, and hematin, an iron-free compound, an isomer of bilirubin. The site of this breakdown with formation of bilirubin is in the reticulo-endothelial cells of the bone marrow, spleen, and liver and from these bilirubin is carried to the liver for excretion by the polygonal hepatic cells. From the hepatic cell bilirubin normally enters the duodenum by the bile passages. The bile pigments are then carried to the small intestine and in the large intestine are reduced by putrefactive bacteria to stercobilin the pigment of the feces, mainly excreted in the feces; some may be absorbed from the intestine and carried to the liver for redisposal and some may fail of conversion by the liver and may be excreted as a colorless modification called "urobilinogen," which on exposure to air and light is changed to urobilin. Theoretically,

as many have pointed out, this latter observation should be of considerable value in determining the patency of the bile ducts but generally single determinations of these substances in the urine have not proved of much prognostic or diagnostic value in our experience at the clinic.

On the basis of these conceptions of biliary physiology the usual **causes of jaundice** may be grouped as increased production of bilirubin, interference with hepatic excretion and obstruction of the biliary passages. As a summary, as Rich has pointed out, it may be stated that jaundice depends on the balance between the amount of bilirubin delivered to the liver for excretion and the capacity of the liver to excrete pigment.

From these conceptions newer **classifications** of jaundice have arisen, among which are those of Rich and McNee. Although criticisms may be voiced in regard to these, the former seems to lack adaptability from the practical standpoint, whereas that of McNee readily lends itself to clinical standards. McNee bases his explanation on his conception of the physiology and anatomy of the hepatic lobule together with the van den Bergh reaction. According to his theory, bilirubin is modified by its passage through the hepatic cells so that it reacts directly to Ehrlich's diazo reagent and gives the so-called direct reaction. This reaction is attributable to gross obstruction of the bile ducts such as occurs with stone in the common duct, stricture, and carcinoma of the head of the pancreas. In such instances, the bilirubin has passed through the hepatic cells and is dammed back to pass into the systemic circulation. Bilirubin, on the other hand, accumulated in the general circulation without passing through the hepatic cells lacks this modification and gives a reaction to Ehrlich's reagent only on the addition of alcohol—the so-called indirect reaction obtained in hemolytic jaundice and pernicious anemia. In jaundice from intrahepatic damage the hepatic cells are incapable of completely excreting bilirubin and as a consequence bilirubin which has incompletely passed through the liver accumulates and a delayed direct or most often a direct reaction usually takes place. Thus, it is possible to classify jaundice as obstructive, hemolytic and toxic or infectious (intrahepatic) and the problem as to diagnosis and treatment is much

simplified if one is enabled to place the case in question in one of these three groups.

As an introduction to **diagnosis**, an understanding of the average distribution of cases of jaundice may be of value. Hartman in a series from The Mayo Clinic found 25% attributable to stone, cholecystitis, or choledochitis, 25% to lesions of the liver, 25% to carcinoma producing obstruction, 7 to 10% to hemolytic disorders, and the remainder to systemic diseases, toxemia, etc. These figures would be somewhat different in an office practice or where more acute cases were seen.

In establishing a diagnosis, a careful history is most valuable. The story of previous illnesses, pain, dyspepsia and the use of cinchophen, arsenic, etc., may offer invaluable leads. Pruritus, tumors, or enlarged lymph nodes, and the size, shape, and consistency of a palpable liver or spleen are of importance.

McVicar and Fitts laid down fundamental principles in the diagnosis of jaundice. In addition to pain when present and its character they determined the van den Bergh reaction (direct or indirect), and the height of the serum bilirubin curve, and the quantity of bile reaching the intestine, as determined by siphonage of duodenal content.

Other procedures may be added, such as the galactose tolerance test, estimates of blood cholesterol, cholesterol esters, and serum proteins, and perhaps the Takata-Ara and hippuric acid tests. The dye retention test, of marked aid in estimating hepatic function in the absence of jaundice, unfortunately is not of much value with jaundice.

In establishing a diagnosis the main problem is in making the necessary distinction between obstructive and intrahepatic jaundice; hemolytic jaundice as a rule offers no serious diagnostic difficulties.

Hemolytic jaundice is of low degree and rarely is the serum bilirubin of more than 8 to 10 mg. per 100 c.c. It is characterized by anemia, with microcytosis, fragile erythrocytes, an indirect van den Bergh reaction, and an enlarged spleen. Pruritus is absent and often there may be "hemolytic crises." Urobilinogen and urobilin are in the urine but not bile pigments and acids. The picture may be obscured in 1 of 3 situations, latent jaundice with minor changes in the blood cells, in patients who also have gallstones or hepatitis

(the former were present in 58% of cases in a series reported by Giffin and the latter in about 50%) and in acute hemolytic crises. Transfusion is a possible factor in increasing hemolysis. W. J. Mayo has long stressed splenectomy as a therapeutic measure and it may be better appreciated when one considers that in hemolytic jaundice the splenic vein contains 3 to 4 mg. more of bilirubin per 100 c.c. of blood than does the splenic artery. The work of Doan, Curtis, and Wiseman further implicates the spleen as the pathologic agent in hemolytic jaundice. Their results from splenectomy in acute hemolytic crises make this the procedure of choice irrespective of the degree of anemia.

Intrahepatic jaundice is primarily a medical problem and for that reason a correct diagnosis is of major importance. As Snell has pointed out functional derangement, atrophy or inflammation of a sufficient number of hepatic cells produces jaundice. The pathologic picture may vary from simple cloudy swelling in the infectious type to the necrosis of hepatic cells in acute or subacute yellow atrophy.

Therefore, the lesions range from minor local degeneration in the hepatic lobule to extensive lesions of the hepatic parenchyma, with replacement by connective or regenerated tissue. These changes produce jaundice through injury to the hepatic cells or bile ducts or disorganization of the hepatic structure; probably all 3 factors operate simultaneously.

The common clinical types may be classified as infectious (epidemic or campaign); spirochetel, toxic from drugs—cinchophen, arsenic, chloroform, alcohol, mushroom poisoning, etc., toxic from systemic disease (exophthalmic goiter, toxemia of pregnancy) and that associated with various types of cirrhosis (portal and biliary).

The onset in **toxic or infectious intrahepatic jaundice** is usually characterized by malaise without pain. Pruritus, nausea, vomiting, and anorexia may be prodromal symptoms. The spleen is palpable in about 25% of cases particularly if of long standing. The liver may be large in acute cases but in the chronic cases is small. The gall-bladder is rarely felt. The jaundice may be of an orange hue as opposed to the greenish-yellow obstructive jaundice. The stools are rarely acholic although in about 35% of cases this is transient. Serum pigment is high, even rising to 25 mg.; this occurs rare-

ly in obstructive jaundice. Levels of 30 mg. or more are presumptive evidence of intrahepatic jaundice. Hypocholesteremia and low values for cholesterol esters are the rule and the galactose tolerance test usually is positive. The urine bilirubin is usually low in proportion to the jaundice. Bile usually is found on duodenal drainage.

The most important type of jaundice caused by drugs is from cinchophen, which may be taken in various patent medicines recommended for arthritis. Cinchophen and its derivatives, which in reality include any drug containing the toxic quinoline radical are contained in about 80 to 90 drugs. Among the more prominent are Cass' remedy, Renton's hyoscine tablets, and oxyliodide. Probably in about 50% of the cases the condition proves fatal. Nevertheless, considering the tremendously large numbers of users of various preparations of this drug the possibility of trouble is probably low and has been estimated as 1 in 500,000. Factors involved are individual susceptibility and prevention of regeneration through continued usage of the drug. Serious consideration of this group is warranted because undoubtedly a large number of the cases go unrecognized and only through a careful history may a lead be obtained as to the causative factor.

Toxic jaundice with exophthalmic goiter and puerperal fever may have a mortality of 50%.

Syphilitic jaundice may be acute associated with treatment or chronic if hepatitis and cirrhosis are complications. Spirochetel jaundice, Weil's disease, is rare.

Obstructive jaundice is primarily a surgical problem. The three clinical types are attributable to stones in the common duct, stricture or malignancy.

Stone in the common duct is the most common and in Eusterman's series occurred in 147 of 533 cases. Pain is of paramount importance in the diagnosis. Statistics indicate that classical colic occurs with jaundice in 60 to 70%, atypical pain in 20 to 25% and no pain in 6% of the cases. In Eusterman's series there had been previous operation in 25 to 33%, chills and fever in 50%, pruritus in 60%, and indigestion in 95% of the cases.

Aside from a history of pain, patency of the bile ducts is of fundamental importance in the diagnosis of this condition. Evidence obtained

by examination of stools or by duodenal drainage shows that the ducts are patent in about 91% of cases. Bockus and his associates have claimed that examination of the duodenal content will also give evidence of calculus by revealing the presence of calcium bilirubinate pigment or of crystals of cholesterol in 86.5% of cases.

One other point of marked diagnostic importance is the level of serum bilirubin. Weir found 70% of his patients had less than 10 mg. bilirubin. Fluctuations in serum bilirubin are the rule and are associated with changes in the patency of the common bile duct. From a prognostic standpoint, the serum pigment curve will prove of considerable value, for an operation will carry considerable risk if undertaken in the face of a rising curve while with a falling curve it is usually well to postpone operation until the lowest level has been reached.

The diagnostic criteria cited, coupled with clinical and laboratory evidence of cholangitis, allow for a high degree of diagnostic accuracy in cases of stone in the common duct; in Eusterman's series a correct primary diagnosis was made in 85% and additional correct alternate diagnosis in 9%, making a total of 94%.

Errors in diagnosis in this group of cases usually result because about 33% have atypical pain or no pain at all and about 13% no jaundice. Recurrent stones confuse the history, as may other lesions, such as stricture of the ducts or malignancy. In prolonged jaundice, hepatitis may develop.

Benign stricture of the common or hepatic ducts, or both, causes obstructive jaundice and is easily confused with stone in the common duct. In a review of 67 cases Eusterman found that almost 90% of the patients were women, chiefly because of the greater occurrence of cholecystic disease among women (3 to 4 times as among men). The usual story is cholecystectomy for a seriously diseased gall-bladder, followed by postoperative jaundice or biliary fistula or both. Biliary fistula, as Balfour and Ross have shown, invariably indicates obstruction of the common bile duct. Symptoms vary considerably depending on the pathologic changes present and may be easily confused with those of stone in the common duct. Incidentally, biliary stasis from stricture tends to

facilitate cholangitis with formation of stones. Certain points, however, may aid in differential diagnosis. Pain, when present, is likely to be less severe than that before operation for the primary condition and may be more of a dull abdominal soreness. Colic occurs in about 30%, whereas it occurs in about 60 to 70% of cases of stone in the common duct. In stricture symptoms usually come on soon after operation whereas in recurrent stones in the duct, Weir found the average time of onset to be nearly 4 years after operation. Jaundice is likely to be constant and not deep, with the level of serum bilirubin averaging 11 mg. The bile ducts are partially patent in about 80% of cases. Pruritus is fairly constant. The liver and spleen are frequently palpable and in prolonged cases hepatic damage occurs. Anemia may be marked with a hemorrhagic tendency.

In obstructive jaundice, carcinoma of the head of the pancreas, neoplasms of the bile ducts and carcinoma of the gallbladder are the chief causes. The first of these conditions is almost 3 times as frequent as the 2nd and about 4 times as frequent as carcinoma of the gall-bladder. Carcinoma of the head of the pancreas occurs chiefly among elderly men, and the average age of onset is 56 years; involvement before age 35 is rare; the diagnosis cannot be made in the absence of jaundice. The pain of obstructive jaundice is largely dependent on the rapidity and degree of occlusion of the ducts and hence may be associated with pancreatic obstruction just as a stone may not produce colic. About 40% of patients who have carcinoma of the head of the pancreas have no pain, about 25% have colicky pain, and the remainder have variable epigastric distress. Jaundice is usually deep and fairly constant and the value for serum bilirubin will average 17 mg. or more. The bile ducts are usually early occluded and in 70% practically completely occluded. Blood may be present in the duodenal content in about 25% of cases. A palpable gall-bladder theoretically should occur at some time in most cases and is found in 50 to 60%. Palpation is aided by having the patient under a sedative. A distended gall-bladder is an accurate diagnostic sign in about 90%. Roentgenologic evidence of duodenal deformity or obstruction may aid in establishing a diagnosis. Gall stones in 12% of cases tend to complicate the picture.

Tumors of the bile ducts are usually malignant, largely occurring among elderly males and are practically indistinguishable from carcinomas of the head of the pancreas. They are rarely diagnosed preoperatively; this may be partially accounted for because a little more than 50% of the patients have disease of the biliary tract and a little less than 50% have stones in the gall-bladder or common bile duct. The lesions as a rule are small and tend to metastasize late. Jaundice may be extreme and constant and deep-seated pain may be present in about two-thirds of the cases.

Carcinomas of the gall-bladder occur chiefly among women who are more than 50 years of age and there is usually antecedent cholecystic disease. There are no characteristic signs or symptoms of this disease and frequently the mistaken diagnosis may be gall stones, stone in the common duct, or carcinoma of the pancreas. A firm, fixed mass in the right upper abdominal quadrant may exist. The diagnosis may be suggested by a history of antecedent cholecystic disease, followed by more continuous pain in older individuals with cachexia, anemia, etc.

Aside from the 3 classical causes of obstructive jaundice just described, cholecystitis is responsible for cases difficult to classify. Jaundice is frequently associated with acute cholecystitis and less frequently with the chronic form. It is probably the result of a combination of factors. Cholangitis and hepatitis probably are its most frequent causes. A large stone in the neck of the gall-bladder may cause jaundice by pressure on the common bile duct.

In hemolytic jaundice the **treatment** is splenectomy. In intrahepatic jaundice treatment depends on the etiologic factor. Detecting and removing the toxic agents will give clinical cure in most cases. Excellent results have occurred in arsenical cirrhosis, and in cinchophen poisoning. General supportive measures are of considerable benefit and among the most valuable of these is a diet high in carbohydrate. Mann's experiments have shown that glucose is almost specific in relieving hepatic insufficiency and this has been borne out clinically when increasing jaundice, restlessness, or drowsiness herald severe hepatic insufficiency. Bollman in experimentally produced cirrhosis prevented or controlled ascites by diets high in carbohydrate; feeding protein

caused the mortality to be higher. Intrahepatic jaundice is primarily a medical problem. In considering operation, if there is doubt it is well to wait until the acute symptoms have subsided for many patients will be on the road to recovery in 6 to 8 weeks or definite subacute atrophy may have become manifest in this time.

In obstructive jaundice, when surgical operation is contemplated or undertaken protection of the liver by **high carbohydrate** intake is important. In addition to the hazards of abdominal surgery is the risk of hemorrhage. The cause of the hemorrhagic tendency in jaundice is unknown and no correlation has ever been made between it, the coagulation time of the blood, or the concentration of serum bilirubin or bile acids. Fibrinogen is not lacking and deficiency of calcium does not seem to exist. Hemorrhage may occur to an alarming degree even with normal coagulation. Nygaard, however, indicated that there is disturbance of the normal coagulation of the jaundiced patient allied with disturbance of the function of the liver. **Hemorrhage** may vary from oozing from cut surfaces to profuse hemorrhage from the skin and mucous membranes. The hemorrhagic tendency of jaundiced patients is combated, as Bowler and Walters have shown, by the empiric use of 5 c.c. of 10% calcium chloride on 3 successive preoperative days. Blood transfusions are most important in controlling hemorrhage and 2 or 3 transfusions may be necessary. In stubborn cases intramuscular injection of whole blood or even irradiation over the spleen may be tried. The hemorrhagic tendency is likely to go in cycles.

Among the various discomforts of jaundiced patients, none is more distressing than pruritis. Three measures used with some success at the clinic are administration of calomel, sodium thiosulphate, and ergotamine tartrate.

Calomel was suggested by Eppinger and by McVicar and Weir. It is usually administered in doses of 0.032 gm. by mouth, hourly for 4 doses without the usual saline purge. It does not act as an eliminant. It has proved helpful particularly in biliary cirrhosis.

Sodium thiosulphate, suggested by Buist, has been given intravenously in doses of 0.5 to 1 gm. and is effective in 50% of cases.

Ergotamine tartrate was suggested by Lichtman in doses of 1 mg. 3 or 4 times daily, or

subcutaneously or intramuscularly in doses of 0.5 to 1 mg. daily. It has given much relief in many instances. Fortunately, as a rule none of these preparations gives systemic reactions of consequence. In the more intractable cases, establishment of a biliary fistula or cholecyst-gastrostomy may be necessary for relief.

Summary

The problem of diagnosis and prognosis in jaundice will be much simplified by employing the classifications obstructive, hemolytic, and intrahepatic. After classification in one of the 3 groups, further investigation into specific etiology can be made and suitable measures of treatment undertaken. Although the newer methods of investigation, such as the van den Bergh reaction, observations of icteric index, and of levels of serum bilirubin, and determination of patency of bile ducts are of inestimable value, clinical data coupled with routine laboratory procedure establish the diagnosis in a high percentage of cases. Observation for days to weeks may often prevent unnecessary and dangerous operations and may clarify the diagnosis. Unusual hazards are presented by the jaundiced patient through the dangers of hepatic insufficiency and hemorrhage and measures can be undertaken to lessen these risks.

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DIAGNOSIS AND TREATMENT OF CHRONIC CHOLECYSTITIS

(Three Illustrative Case Reports)

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(Presented before the staff meeting of the Good Samaritan Hospital).

It is my purpose to review the more common types and phases of chronic cholecystic disease and associated pathology, with special reference to diagnosis and surgical treatment. I discuss mainly surgery of the gall bladder in relation to cholecystitis, cholangitis, and hepatitis. Obstructive jaundice and lesions of the common duct are not considered. Three cases of chronic cholecystitis illustrating the three types are reported.

The **diagnosis** of chronic cholecystitis is not always easy. Unlike the acute form, chronic cholecystitis often presents complicated baffling clinical pictures. Few organic lesions are so common and withal so varied in symptomatology. It is second in frequency only to appendicitis among chronic abdominal diseases.

Three well-defined types of chronic gall bladder disease are recognized: chronic cholecystitis due to infection, chronic metabolic cholecystic disease (cholesterosis of the gall bladder), and clinical cholecystitis without obvious pathologic change in the gall bladder.

The **symptoms** of chronic cholecystitis are primarily local or referred. In the local type the patient commonly complains of recurring pains or aches in the gall bladder region. The pain may or may not be referred. Following the attacks residual soreness is characteristic though not as marked as in the acute type and may be only a discomfort or tenderness under the right costal margin, or in the right epigastrium. Symptoms are almost always increased by physical exercise, jarring or jolting, and are more pronounced after a full meal. Jaundice rarely occurs except with a stone impacted in the cystic duct lying so as to press upon the common duct or when there is an associated hepatitis or cholangitis. Digestive disturbances are frequently absent and when

present remain more or less in the background, overshadowed by the pain.

In the reflex type digestive upsets dominate the picture, and acute pain is the exception rather than the rule. The tendency is toward constancy rather than intermittency. Qualitative food distress is almost invariably present. A common complaint is the inability to eat fried, greasy, or fatty foods, highly acid foods, raw fruits, pickles, cabbage, and salads. The distress is entirely in the upper abdomen usually immediately after meals. Complaints are of fullness or distension, with a feeling of pressure in the epigastrium regardless of the amount of food eaten. Bloating and belching is the rule. Burning in the stomach with acid eructations may be relieved temporarily by soda. As the food passes along and the upper digestive tract is emptied the symptoms decrease. In the milder cases they may disappear entirely until the next meal.

Associated pathology: gross changes in the liver are inevitably present in long-standing cases of chronic cholecystitis—first pointed out by Graham in 1918. The liver is mottled, swollen, and scarred. Its normal wedge-like edge is often rounded, edematous, and friable; occasionally it is thin, fibrosed, and tough. These inflammatory changes are most marked in the vicinity of the gall bladder, but extend diffusely throughout the liver parenchyma. This is explained by the dense lymphatic anastomoses and the venous connection between the gall bladder and liver. Although liver changes are usually secondary to gall bladder infection, hepatitis may be the primary lesion. This may be explained by the fact that it is possible for lymph to pass in both directions between the gall bladder and liver. It also suggests that much biliary infection spreads by way of lymphatics. Regardless of the pathogenesis it is important to remember that although this type of hepatitis is mild and progresses slowly if allowed to continue for years, severe cholangitis and even biliary cirrhosis may result.

In certain cases of prolonged biliary disease, secondary pancreatitis may result. The head of the pancreas is usually large, irregular and hard—the so-called interlobular or interstitial pancreatitis. The islands of Langerhans are seldom involved. Symptoms resembling bil-

iary colic, however, may occur even after the gall bladder has been removed.

Chronic appendicitis frequently is associated with gall bladder disease. One investigator (Larimore) found that 14% of a large series of patients with chronic cholecystitis had been operated previously for appendicitis; 50% showed appendiceal involvement (x-ray diagnosis); only 36% showed no evidence of appendiceal pathology.

Whether or not stones are present in diseased gall bladders is beside the point since the primary seat of the trouble is not the stones but the infection that lies within the walls of the gall bladder.

Treatment: Since the primary site of infection in chronic cholecystitis is in the gall bladder wall, the logical treatment is cholecystectomy. Infection cannot be completely removed by surgical drainage. Good results have followed cholecystostomy, but the end results are uniformly better when the gall bladder is removed. Certain conditions remain in which cholecystostomy is preferable to cholecystectomy. Local technical difficulties, such as obesity, may make it impossible to identify important structures; the general condition of the patient may be such that cholecystectomy is hazardous; obstructive lesions of the common bile duct may make relief from jaundice the paramount issue; and the obstruction of the common bile duct may be such that cholecystogastrostomy may need to be performed later.

In advanced hepatitis or cholangitis with marked increase in the intrahepatic tension prolonged drainage of the common duct was frequently practiced by the late John B. Deaver and by the late E. S. Judd. Drainage is effected by a "T" tube accurately sutured in the common duct and left for several weeks; biliary tension is lowered to a minimum, adequate liver function is regained rapidly and convalescence is shortened.

Occasionally at operations one finds a minimum of gross pathology in the gall bladder and ducts, no evidence of biliary obstruction and yet a marked hepatitis. The surgeon, therefore, hesitates to explore or drain the common duct. In such cases cholecystectomy with drainage of the cystic duct for 10 to 14 days will give excellent results. This procedure is accomplished by amputating the gall bladder approximately one-half inch above the cystic

duct and suturing a small rubber tube firmly into the remaining portion of the ampulla. One Penrose cigarette drain is placed beside the tube and both are drawn through a small stab wound lateral to the incision. A portion of omentum is interposed between the liver and the adjacent viscera.

Case Reports: Three cases illustrate different types of chronic cholecystitis, clinically as well as pathologically.

A male office worker, 52, complained of typical attacks of gall stone colic which dated back 6 years recurring every 12 to 18 months. Although he had had slight digestive disturbances at times, the entire picture was dominated by pain and residual soreness. He was slightly jaundiced and tender to palpation over the gall bladder with moderate rigidity over the entire upper right quadrant. He was given alkalies and intravenous glucose for 3 days after which cholecystectomy was done under general anesthesia.

The gall-bladder was extremely hard and fibrous; its walls were nearly three-fourths of an inch thick. Moderate liver damage was present especially in the right lobe; the head of the pancreas was apparently fibrotic. These findings were of course expected from 6 years insult to the biliary tract. The post-operative course was uneventful and his health has been excellent since the operation.

A housewife, 57, complained of indigestion, flatulence, chronic constipation, anorexia, and weakness dating back many years. The symptoms were typical of gall-bladder dyspepsia with qualitative food distress, bloating, flatulence, and intolerance to the usual foods. When the "spells" were most severe she had to stop eating altogether for a few days or go on a liquid diet. On one occasion she became anemic and generally run-down and had to spend considerable time in bed. Recently her digestive troubles had been worse and she had become extremely weak and unable to do her housework.

Moderate tenderness existed over the gall-bladder and she had marked flatulence. X-ray examination of the gastrointestinal tract was negative. After the usual preoperative preparation cholecystectomy was done.

Her digestion has returned to normal and her health has been splendid. The gall-bladder showed mild chronic inflammation entirely

overshadowed by the clinical picture and yet its removal brought complete relief. This case is, therefore, properly classified as clinical cholecystitis.

A saleslady, 42, complained of pain in the upper abdomen referred to right shoulder blade, generalized tenderness in right hypochondrium and epigastrium, flatulence, obstinate constipation requiring daily laxatives, general malaise, anorexia, loss of weight, and extreme nervousness. The symptoms dated back 13 years, when she had had an appendectomy and a cholecystostomy for gall-bladder disease. She had never fully regained her health and had gradually grown worse, especially during the past 2 years. The dull pain had become more or less constant and she could hardly eat anything without bloating, belching, eructations, and generalized tenderness in the upper abdomen. She was extremely nervous and going down hill rapidly. Roentgenologic examination revealed a poorly functioning gall-bladder containing stones. She was slightly jaundiced. Cholecystectomy was done. Many dense adhesions were encountered. There was marked hepatitis throughout the visible portion of the liver and moderate fibrosis of the head of the pancreas. The lymph nodes along the common duct were hard and large. Again this is the usual picture from 12 years of infection of the biliary tract; furthermore it illustrates the futility of trying to establish a cure of chronic cholecystitis by cholecystostomy. It also demonstrates the wonderful recuperative and regenerative powers of the liver. In the past 10 months this patient has improved remarkably. She has gained 20 pounds in weight and her general health and physical condition is much improved.

Results: The end results of gall bladder surgery depend primarily upon the proper selection of cases, which is upon clinical pictures presented. Laboratory findings are of secondary importance, and must be used only for corroboration. A patient with a low metabolic rate may show a positive Graham-Cole test that may disappear under medical treatment for the metabolic disorder. Likewise a patient with clinical cholecystitis may be relieved by cholecystectomy, although repeated x-rays have revealed a normally functioning gall-bladder.

Removal of the gall-bladder will give excel-

lent results in cholecystitis whether the outstanding symptom be pain or dyspepsia provided the latter is definitely of cholecystic origin.

DIAGNOSIS OF EARLY TUBERCULOSIS

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(Read before the New Mexico Public Health Society, May 8-11, 1936).

The importance of early diagnosis of pulmonary tuberculosis has been stressed so long and so often that one would think every physician would be constantly on the watch for tuberculosis suspects. Medical men, as a rule, are keenly alert for cancer and syphilis, yet many seem strangely hesitant to diagnose tuberculosis until forced by progressive symptoms often obvious to the patient himself.

Much has been said about the difficulty of recognizing early pulmonary tuberculosis. This is largely imaginary. With few exceptions, it can readily be detected in its early stages by methods at the command of any physician who is tuberculosis conscious. The failures are due more to not looking than to not knowing. If one is alert and does not carelessly disregard the characteristic symptoms very few cases will be overlooked. With a patient's life at stake one should err on the side of over-caution, even at the risk of being phthisophobic, and suspect tuberculosis in all illness of obscure origin.

No new methods have been devised for detecting tuberculosis in its incipency. We still rely on clinical symptoms and physical signs, supported by x-ray and sputum examinations.

A careful history is most important. The presence of certain cardinal symptoms is sufficient to make at least a tentative diagnosis of tuberculosis.

Fatigue symptoms are nearly always present. The patient feels tired, and lacks his usual endurance. He is not always conscious of this, as sometimes a toxic nervousness stimulates him to increased activity, restlessness or insomnia, to which he attributes his tired feeling.

A cough, with or without expectoration, lasting longer than one month is always sus-

picious. It may not mean tuberculosis, but it usually means more than an ordinary cold, and should be investigated with tuberculosis in mind.

Loss of weight comes from many causes, but unless it can be readily accounted for, tuberculosis should be thought a possible cause.

A persistent low grade fever, with afternoon rise and subnormal morning temperature, should be regarded as tuberculous until proven otherwise.

Blood spitting of any amount more than streaks in the sputum, should always raise the suspicion of tuberculosis.

Definite pleurisy with or without effusion, is indicative of tuberculosis in 90% of the cases which do not have such evident causes as pneumonia, lung abscess, bronchiectasis, malignancy, injuries, etc.

These are the 6 cardinal symptoms of pulmonary tuberculosis, and a combination of 2 or more should at once arouse strong suspicion of tuberculosis.

The most important physical finding is fine crepitant or moist rales. These are most often in the upper lobes and precede marked changes in breath sounds, resonance or voice conduction. Dullness and broncho-vesicular breathing usually indicate old extensive lesions. While crepitant rales in the upper lobes are fairly conclusive of active tuberculosis, the failure to hear them does not rule it out. Small or deeply seated lesions may give no physical signs and fairly extensive lesions may be dry, or masked by coarse bronchial rales.

X-rays of the chest should be taken in every case under consideration. Good stereoscopic chest films may reveal areas of tuberculous infiltration that are much too small or too deeply located within the lung parenchyma to give physical signs at the surface. On the other hand, in node tuberculosis and certain types of basal lesions, the x-ray findings may be inconclusive, even in the face of definite physical signs or positive sputum. By careful history and examination one should, in most cases, be able to make at least a tentative diagnosis of tuberculosis, and then resort to the x-ray and laboratory for corroborative evidence. With efficient laboratories offering easy short cut methods of diagnosis, we are prone to neglect the expert observations on which our preceptors had to rely.

One should not wait for a positive sputum which means breaking down of lung tissue with liberation of bacilli. The careful physician should in most cases be able to make a diagnosis of pulmonary tuberculosis before this occurs.

PRACTICAL POINTS IN DIAGNOSIS AND TREATMENT OF CYSTITIS

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(Read before the 54th annual session of the New Mexico Medical Society, May 8-11, 1936.)

Cystitis is frequently seen by the general man; treatment is often impractical and the disease as a result is neglected.

Diagnosis is sometimes difficult or impossible without the aid of cystoscopy. Nowhere in the urological tract do we see symptoms as characteristic of the pathological condition as in bladder diseases. The various conditions can be diagnosed with only a small percentage of error by careful evaluation of the symptoms and the findings of examination.

The common most frequently seen cystitis in women has frequency of urination, usually diurnal, slight burning during and immediately after voiding and vague discomfort in the groins. An abnormal amount of leucorrhea commonly exists and the external urinary meatus is deeply reddened. Introduction of the catheter except under local anesthesia is usually painful. The catheterized urine in the majority of instances is microscopically clear and sparkling. A finger in the vagina palpating the urethra over the catheter finds distinct thickening and infiltration. The treatment of this is simple and immensely satisfactory. The urethra is dilated twice 5 days apart with sounds up to a 30 F. Usually on her 2nd visit she admits feeling greatly improved. On her 3rd visit 5 days after the 2nd a wooden applicator tipped with firmly wrapped cotton well lubricated and saturated with 5 to 10% silver nitrate, is inserted the length of the urethra and then withdrawn. This mildly cauterizes the urethra and gives a topical application to the trigone always slightly involved. Three more dilations and cauterizations should

be carried out at weekly intervals. I believe the trouble is due to ascending infection from the vagina. The necessary gynecological check-up should be made at the first visit.

The next most common condition in the female bladder is **cystitis associated with cystocele**. Marked bulging of the bladder into the introitus occurs when the patient strains. Catheterization following urination usually secures from a few c.c. to an ounce or more of residual urine. The symptom complex is comparable to the prostatic patient's residual infected urine. It is a problem as to what advice to give this type of patient; I have made it a rule to advise against repair where possibility of pregnancy exists because innumerable repaired cases going through full term pregnancies have the plastic work destroyed.

The treatment, I think, simmers down to conservative measures for the relief of symptoms. My routine gives gratifying results. I consider it folly to lavage acutely inflamed bladders with large quantities of irritating antiseptic solutions. The inflamed bladder is already making violent spasmodic attempts at frequent urination to keep from being distended. I use 7 to 15 c.c. of 1 to 10,000 potassium permanganate or 2% boric acid to cleanse the bladder. Following this, instillations of 7.5 c.c. of 5% argyrol, emulsified with an equal amount of sterile mineral oil is gently instilled. It is amazing how soon relief comes and how long the solution can be retained. This treatment should be carried on until the acute symptoms subside and the urine remains clear.

Another form of cystitis usually easily diagnosed is **sub-mucous cystitis**. The characteristic symptoms are a regular frequency both day and night. The pathology is below the mucosa and is, I believe, from foci of infection usually of the teeth. The urine is clear perhaps with an occasional blood cell. The patients frequently volunteer the information that at times when forced to retain the urine longer than usual, bleeding occurred. This is classical, with distention of the bladder beyond its present capacity the mucous membrane tears where it adheres over the involved sub-mucosa. This accounts for the bleeding. Usually following an occurrence of this type, the symptoms are allayed. The treatment consists in over-distending the bladder, gradually until

the capacity approaches normal. In addition the area involved should be fulgurated.

Another distressing bladder condition is **tuberculous cystitis**. It is secondary to tuberculosis of the upper urinary tract. These patients, common in the southwest, present most distressing symptoms of frequency, burning, pyuria, and dysuria. A treatment from which I get encouraging results is the use of 20% oleum-gomenol, as a bladder instillation. When this does not control the symptoms, I use a suspension of orthoform in oil, 1 dram to 2 ounces. An instillation in the empty bladder gives almost instant relief and lasts for several hours.

A foul urine with history of hematuria indicates an **advanced malignancy** of the bladder.

These are the bladder conditions most commonly met with in general office practice. It is practical to institute internal treatment with alkalies, urotropin and the other urinary antiseptics. In the acute inflammations, try tritigen by mouth. This has seemed to quickly allay bladder tenesmus and frequency.

Undescended Testicle Successfully Treated With Antuitrin "S"

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A male, age 12, height 58.5 inches, weight 113 lbs., was the miniature duplicate of his father in build, height and overweight.

He was short and thick, very heavy, fat over hips and pubes, no pubic hair, and an extremely short and small penis. The left testicle was in the scrotum and appeared unduly small; right testicle could be felt at top of the inguinal canal and could not be brought down. Our impression was that it was smaller than the left testicle.

Basal metabolic rate was minus one. General physical examination was negative. Blood examination showed hemoglobin 70; red blood cells 4,300,000, white blood cells 7200, polys 60, small monos. 35, large monos. 3 and eosinos. 2.

He was given hypodermics of antuitrin "S", 1 c.c. every 2nd day for 5 weeks without further local examination. The left testicle and penis then were definitely larger than before

and the right testicle was completely down in the scrotum, perfectly normal in size.

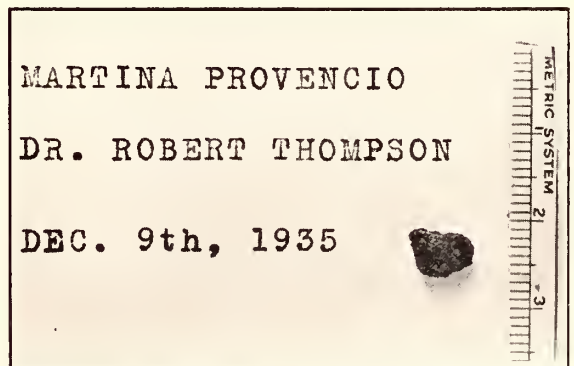
This and observations of others indicate that young children with undescended testicles, should have the benefit of medical treatment before surgery is offered. Our experience with surgery has been unsatisfactory.

We have no knowledge as to how much earlier than 5 weeks the descent of the testicle in this boy may have occurred. He was examined by 3 of us on 2 occasions before treatment was begun, so there was no mistake about the undescended testicle, as all agree upon the position of the testicle.

URETERAL STONE SIMULATING INTRAPERITONEAL PATHOLOGY

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A female, 28, Mexican, entered the hospital complaining of pain in the right lower abdomen. For the previous 8 hours she had nausea but had not vomited. Ten days previously she had a similar attack which lasted for several hours. Dysuria was experienced but not frequency.



Examination: Temp. 99.6, pulse 80, Resp. 20, well nourished. There was appreciable tenderness and rigidity in the right lower quadrant of the abdomen and slight tenderness over the right kidney.

Urine was smoky brown and muddy in appearance and contained albumin, R.B.C. 200-300 and W.B.C. 15, H.P.F. The blood had Hb. 80%, W.B.C. 14,400; R.B.C. 4,000,000; Polys.

82%, Monos. 3%, Lymph. 15% and Kahn 4 plus (2 examinations).

The data strongly suggested appendicitis. A number 7 catheter advanced up the right ureter met a definite obstruction at about 20 cm. The wet plates showed a shadow that was presumably a stone in the mid-portion of the ureter. The skiodan did not pass the obstruction and the kidney was not visualized.

Two days later, a number 5 catheter was inserted into the right ureter, which progressed 20 cm. where it met definite obstruction. A flat plate showed the stone in the right ureter at the level of the 4th lumbar vertebra. The ureter was tortuous below this point and none of the skiodan passed the obstruction. Operation was decided upon.

Operation: A number 5 ureteral catheter was inserted up the right ureter to the stone. Spinal anesthetic of spinocaine was given.

A right rectus incision was made and an essentially normal appendix was removed. The peritoneum was closed and dissected away from the transversalis fascia. The ureter was located and the stone palpated in approximately the location shown in the x-ray. A longitudinal incision was made in the ureter and a rough stone about the size of a good sized bean was removed. The ureter wound was sutured with fine interrupted catgut and a small piece of fat was anchored over it.

Convalescence was stormy for a few days due to thrombotic pneumonia. Four weeks after the operation she was up and about the ward with no complaint. The wound was in good condition and the drainage opening had been closed for some time.

Pathologic report: Gross specimen consists of an appendix approximately 40 m. m. in length x 3 m. m. in diameter. There is considerable fat adherent throughout. The external surface is clear. The walls are thin and the lumen is small and empty. The mucosa is destroyed and the lumen is filled with fibrous tissue and fat. The outer coats are dense. Diagnosis—obliterated appendix.

Progress note: Patient reported for observation one month after leaving the hospital; the wound was healed and she had no complaint. She was regularly obtaining anti-luetic treatment.

Comment: The symptoms and physical findings on admission of the patient to the hospital

were more suggestive of appendicitis than of urinary lithiasis and at operation it was proven that she had no appendix trouble and did have a stone imbedded 20 cm. up in right ureter.

This case strikingly illustrates that ureteral stones may simulate intraperitoneal disease; when the diagnosis of intraperitoneal disease is not conclusive urological investigation should be made before operating.

MEDICAL ANNALS OF ARIZONA

HEALTH AMONG THE NAVAJOS

SIDNEY J. TILLIM

(Concluded from October issue)

The field physicians, with a few nurses, look after the school children in the day schools and visit sick Indians in their hogans. The field nurses do, and are in a position to do, a great deal of good as an educational force. Each should be provided with an interpreter-driver, in case of trouble with their cars while on some deserted road. Without an interpreter their usefulness is hardly half of what they could accomplish. The field physicians', is the most expensive and the most useless form of, medical service contrived; three months of this work convinced me that it is a worthless, wasteful activity which does more harm than good. Field work in the Indian Service bears no resemblance to the old time country practice. The physician cannot leave medicine to be taken at certain specific times because most Indians tell time by the sun; the Indian cannot be trusted with patent drugs because he is easily tempted to try getting well quickly, even though cautioned against taking an overdose. Of course he may be contented with getting the medicine from the doctor and, hope to get well without using it. The physician can never be certain that his instructions were properly translated by the interpreter who generally has only about a sixth grade common school education; it is difficult to transpose English into Navajo. They have a poor "sense of sickness," unless the patient is moribund or shows some impressive symptom such as passing blood, hyperpyrexia, a convulsion, or suffers pain. As a physician, the field man can do no more than can an intelligent field

nurse, which is to encourage the really sick Indian to accept hospital care. These views are in accord with the views of other men in this type of work. The possible good work and educational value of a field nurse are easily seen, but in the light of the Navajo custom of traveling for many miles, in great numbers, to attend a "sing", it is difficult to justify the wisdom of physicians hunting for patients. One of the most impressive experiences is the widespread unwillingness of the Indians to help in the conservation of means for the care of the sick provided by the government; they call for the doctor to see a patient at a hogan, whether it be two to three miles or 50 miles, without themselves attempting to bring the patient to the hospital. Yet, in nearly every such instance it means another patient for the hospital, unless the patient or the family decides to the contrary. In some sections of the reservation this excessive catering is discouraged; in other sections the practice is encouraged, even insisted upon, by the local superintendent.

SUMMARY

I have attempted to present an uncolored, descriptive view of health conditions among the Navajos—environment, habits, disease, and the agencies interested in these. I am conscious that there may be some reflection of my feelings and views relating to this subject. Complete objectivity for one who has been part of the picture is difficult.

APPENDIX

From the minutes of the Navajo tribal council, 11th session, July 7 and 8, 1933. Fort Wingate, N. M. From an address by Toadechenie Chischille, alternate from S. Navaio jurisdiction.

"My friends, I come from way out back district of the Fort Defiance Jurisdiction, a place called Chin Lee. I wish to bring at this time the shortage that is existing out in that district in the way of hospitalizing people. Just recently I spent two weeks in the hospital and found out the conditions there and found out that they did not have the money to equip that hospital and it is not big enough to take care of the people from the reservation. It has two wards of only six beds and in case of epidemics there it will not take care of the school children. Our agent at Fort Defiance knows the condition out there and knows it is a thickly populated country and the hospital is too small. In years past Indians in general were somewhat backward in taking advantage of hospitals but now they will take more advantage of them and for that reason hospitals should be

enlarged and money should be appropriated to enlarge the hospitals. And I am pleading with you to do what you can on this. I know the condition myself and that is the reason I am bringing this up. Therefore I ask again and plead with the government and the commissioner and all of the staff of workers, to help enlarge this hospital at Chin Lee.

"No doubt in other districts conditions are similar to this and that is the reason I want to impress the commissioner to do what he can to enlarge this hospital for my people. Of course our Agents our telling us to educate our children and many other things in connection with that and they tell us to be healthy and bring up our children healthy and I am not only speaking for the Chin Lee district but for other places in the Chin Lee country. I am speaking for my people here. Many of them have left already but I am talking for their benefit. I am speaking to all agents: Do all you can for my country along this line."

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SYPHILIS AND ITS TREATMENT: by William A. Hinton, M. D., Boston. The MacMillan Company; New York; 1936; Price \$3.50.

The book is written with the theme that syphilis is a far more prevalent disease than is ordinarily suspected and that practical syphilology is completely handled only by specialists in that field. The book is written in such language and style as to appeal to the average physician and should be of great benefit to general practitioners who have not had an opportunity to get the latest ideas upon the disease.

The book has 321 pages and is divided into three parts: The manifestations of syphilis, treatment of syphilis and an appendix dealing with the laboratory phases. The author lays special stress on diagnosis. His treatment should be carefully read.

The book is highly recommended because of the importance of the subject and the practical ideas thereupon. The printers have done a pleasing job.

SOUTHWESTERN MEDICINE

Printed by THE A. C. TAYLOR PRINTING CO., Phoenix, Arizona
Published monthly for the Board of Managers of the four constituent societies.

VOL. XX.

NOVEMBER, 1936

No. 11

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OUR DUTY

We edit on the theory, no matter who the author, that his paper has no right to occupy more space or to use more words, than necessary to state its facts and theories so as to be understandable to its readers. This is a busy world. Few of us get to do the slightest fraction of the things we'd like to do. The writer who uses an excessive number of words in putting over his message is a robber of his readers' time and a confrere's right to get his message into print. He robs also himself of prestige because his lengthy article has few readers as compared to those his shorter article would have. Paper and the labor of setting type are both expensive.

We are not captious nor frivolous with any physician's "brainchild." Our board of managers, however, has instructed us to "boil down" all articles as much as possible. We aim not to destroy or twist any author's meaning nor to seriously alter his style.

It is not unusual for us to delete sufficient words from an article of 12 to 14 pages to reduce it to 6 to 10 pages with nothing being omitted except unnecessary words. From other articles we are able to delete relatively few words. Our deletions are in inverse ratio to the care and time an author spends upon his paper. A year or more ago a certain author submitted a paper from which we deleted perhaps 25% of his words. This year he submitted another paper and the deletions were negligible. We probably save enough space of each issue to publish perhaps two short papers that would otherwise be crowded out.

In the main our contributors have expressed themselves as appreciative of the vast amount of time we have spent in editing their articles

so as to get their ideas across in the fewest possible words. Occasionally an author has said to us in effect, I wish my paper published exactly as I wrote it. Such an author certainly does not understand the problems which confront us.

He should realize that the editor takes the viewpoint of the reader as well as of the author.

Unless a paper has readers who understand it the author has failed in his purpose. The author therefore should regard the editor as his ally, his valued critic. The author who has written a great deal usually considers his severe critic as his excellent friend. The man who has not written much is prone to object to any criticism of his paper. The physician who has written much ordinarily will say occasionally, "I appreciate your editing, but you have missed my point at one place or more as the case may be, please change as follows . . ."

We remember so well that when we first wrote we were resentful when an editor made changes in our manuscript. Now we appreciate the editor who has the nerve to tell us of our mistakes or the changes which should make our meaning more clear to our readers.

Medical literature is accumulating at a tremendous rate. The copies of medical journals of permanent value are those which are preserved in libraries. Space in libraries is precious.

We believe that articles merely reviewing the present status of a subject, and many papers are entirely or largely of this type, presenting little or nothing original, are nevertheless worthy of publication; but the authors should strive to use no more words than necessary to present the facts.

MEETING OF THE SOUTHWESTERN MEDICAL ASSOCIATION

If the readers have taken notice of the last two issues of Southwestern Medicine they will have been informed that strenuous efforts have been made to have an unusual meeting on November 18, 19 and 20 in El Paso. The speakers are all outstanding clinicians of the United States from widely separated places that come with the idea of giving us the latest advances in medical science. For those physicians who may not know: this is an annual postgraduate medical course of three days intensive study. It will cost the small registration fee of three dollars plus your loss of time and necessary expenses to attend the meeting. No one of us can afford to miss it if it is at all possible to be there. The program committee has done an outstanding piece of work in arranging this program and if for no other reason we should attend to show our appreciation of their devotion to the association and of their hard work in arranging the program.

SECRETARIES OF STATE MEDICAL ASSOCIATIONS AND EDITORS MEET

The American Medical Association is again entertaining the secretaries of the state medical associations and the editors of the state journals. This year's meeting is November 16 and 17 in the Association's headquarters in Chicago. These are annual affairs for the good of organized medicine.

The expenses of the secretaries and editors to the meeting are borne by the American Medical Association. Other officers of state medical associations are invited and urged to be present to participate in the meetings; but their expenses cannot be borne by the American Medical Association.

It has been our privilege to attend one of these; we look forward to this meeting with anticipation of a profitable two days. We urge the presidents and other officers of our associations to attend if at all possible.

An automobile emblem was lost or stolen from Dr. J. Rosslyn Earp's car on September 1st outside the Sandoval County Court House. Its registered number (A.M.A.) is 54483. If this emblem is brought to any doctor's office, he will please notify Dr. Earp at Santa Fe, N. M.

The next written examinations and review of case histories of Group B applicants by the **American Board of Obstetrics and Gynecology** will be held in the various cities in the United States and Canada on Saturday, November 7, 1936, and on Saturday, March 6, 1937.

The next general examination for all candidates (groups A and B) will be held in Atlantic City, N. J. on June 8 and 9, 1937.

Application blanks and booklets of information may be obtained from Dr. Paul Titus, secretary, 1015 Highland Bldg., Pittsburgh, Pennsylvania. Applications for these examinations must be filed in the Secretary's office not later than 60 days prior to the scheduled date of examination.

The **Bureau of Human Heredity**, 115, Gower Street, London, W. C. 1., England is collecting from institutions and individuals well-authenticated data on the transmission of human traits whatever they may be. Pedigrees are particularly desired; twin studies and statistical researches are relevant. Material should be given with all available details in regard to source, diagnostic symptoms and the name and address of the person or persons who vouch for accuracy. All such details will be regarded as strictly confidential. Reprints of published work are especially desired. Any such material in the possession of our members should be sent to the above address.

The **American Medical Editors' and Authors' Association** is offering through its director Harold Hays, M. D., 133 E. 58th St., N. Y. C. to take articles submitted on medical subjects and put them into shape for publication. This service is free of charge whether the writer is a member of the Editors' and Authors' Association or not. They also will provide an author with the references which he desires, and which may be found in the New York Academy of Medicine. Dr. Hays has also arranged for an outlet for non-medical articles which physicians may write and wish to have published.

In the event that an article is accepted, there will be a 10% authors' agent charge. It is said that submitting manuscripts to authors' agents save a great deal of time and money to the author with the increased chance of its being accepted.

A film on the technic of **hernia injection** has been prepared by the Farnslow Laboratory, Chicago, Ill., which will be loaned to any medical association wishing it. A six m.m. projection apparatus is necessary for its showing.

The **Volta Bureau** should be known to every physician. The purpose of this organization is to gather and disseminate information and advice in regard to improving conditions for the deafened. It publishes a Journal, The Volta Review; its services are free.

It happened to be our lot to be a sort of a medical sponsor for the Hard of Hearing League of Phoenix and because of this, we have become acutely interested in this problem. Physicians generally probably do not realize that the hard of hearing problem is an extremely acute one, much more than that of the blind or of the lame. When one has lost his hearing he is isolated from normal society and most persons find it extremely difficult to obtain employment. The problem of deafness is one that should be studied by every physician.

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A SANGUINARY CONFLICT

"READ YOUR OWN BLOOD PRESSURE, 10c," was the large sign in front of a device at Coney Island, pictured on this page, which has become the storm center of a legal battle. The State Department of Education has asked the Supreme Court to order this and other machines of the kind out of existence on the ground that their operation violates the State Medical Practice Act. Taking a blood pressure is argued to be a diagnosis of a physical condition, and should not be done except by a physician. The maker of the machines has countered by filing an injunction to prevent interference with his business, and the matter will be fought out in the courts.

On August 12 an operator of one of the machines was arrested on a charge of practicing medicine without a license, and will soon be brought to trial. Any comment here on his guilt or innocence of this offense before the verdict would be in contempt of court, and the next issue of this department might have to be written in the calaboose, so nothing had better be said, perhaps, on that point.

It would be easy to magnify the danger of this blood-pressure device out of all true proportion. Probably nobody with arteriosclerosis is going to burst a blood-vessel when he sees the pointer climb to some high figure on the dial. At the same time we all know that such a casual sidewalk reading is more likely to be wrong than right. The poor dupe who pays his dime may easily be so fidgety that he will show a higher pressure than he normally has. Every doctor knows the excitable type of patient who has to be calmed down and put at his ease before taking the reading, or it will be too high. A leading Boston internist is quoted as saying that he takes three rapid readings in succession in all cases and accepts the lowest systolic and diastolic as the fairest.

Firing a Cannon at a Flea

The Coney Island device came up in a conversation at the New York Academy of Medicine a few days ago and a well-known physician said it reminded him of an experience related by Heywood Broun, the columnist. It seems that Broun was having a physical examination, and noticed a slight lift of the doctor's eyebrow as he took his blood-pressure. "What's wrong, doctor?" "Oh, nothing." "Why did you lift your eyebrow?" Well, your blood-pressure is just a little low, but not enough to bother about."

Nevertheless, it did worry him, and a few days later he decided to have another doctor go over him. Again, as he was taking the blood-pressure, the physician's eyebrow arched a trifle. "What's wrong, doctor?" "Oh, nothing." "Why did you lift your eyebrow?" "Well, your blood-pressure is just a little high, but not enough to bother about." The worry had done it. The fact is, of course, that the arterial tension is so fickle an affair that a device like the one at Coney is worse than useless. To take a test after chuting the chutes, bumping the bumps, riding the merry-go-round, and filling up with hot-dogs and peanuts is like counting the pulse after a foot-race. But to get all steamed up over the imaginary perils of the machine is equally too feverish. If some folks are scared into consulting a doctor, they may get a real examination and advice that will do them good. Too drastic action may be like firing a cannon at a flea.—New York State Journal of Medicine, 36: Sept. 1, 1936.

POST-GRADUATE CASE STUDIES

On page 404 of the October issue of Southwestern Medicine is a case report with discussions by staff members of the El Paso City-County hospital. The autopsy report and Dr. Rawlings' discussion of it were purposely withheld to permit the Phoenix

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★ *Proc. Soc. Exp. Biol. and Med.*, 1934, 32, 241-245

Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154

N. Y. State Jour. Med., June 1935, Vol. 35, No. 11

Arch. Otolaryngology, Mar. 1936, Vol. 23, No. 3, 306-309

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Clinical Club to discuss the case before knowing the autopsy findings. The discussions of the Phoenix Clinical Club follow. The first discussion presents the salient points of the record. Following these discussions, p. 444, is Dr. Mott Rawlings' report and discussion of the autopsy.

J. W. PENNINGTON: A slightly obese, Mexican woman, about 50 years of age, had a slowly growing swelling in the abdomen for 6 months. During the past 2 to 3 weeks she had colicky, knife-like pain. She was in fair general condition, temperature of 103.6°, pulse 100, blood pressure 100/75 and respirations 30, slightly labored. The sclerae were slightly icteric. In the right upper quadrant was a large palpable firm, nodular mass, 10 cm. across which did not descend on respiration and which seemed to rise from the right kidney fossa. It was tender on palpation. There was a definite line of demarcation between the costal margin, and the tumor. A tentative diagnosis of hypernephroma was made.

The gastric analysis showed retention. The total and free HCl were within normal limits. Hemoglobin was 97% and white count 9,000 with 56% polys. Kahn's test was 4 plus at examination. Van den Bergh tests were negative. She had a variable temperature during her 2 weeks in the hospital.

Gastrointestinal series showed almost complete 6 hours retention. A pyelogram of the right kidney showed nothing abnormal. Soon after pyelogram, the patient developed a tremendous hyperpyrexia and died.

In the differential diagnosis in this patient, one must take into consideration a renal tumor, gall bladder disease, liver abscess, ovarian cyst or tumor, abscess of the liver, gumma, carcinoma of the ascending colon, abdominal aneurysm, tuberculosis of the colon, and retroperitoneal tumor.

Empyema of the gall bladder ordinarily gives a smooth globular tumor, which would not extend into the kidney region. Gall stones can be dismissed, as rarely does marked enlargement of the gall bladder occur with stones; one ordinarily expects to find a thickened wall bound down with adhesions, making it impossible for great dilation.

An abscess or cyst of the right lobe of the liver has to be considered but with an abscess, leucocytosis would be expected. A cyst might be multilocular and give the nodular feel that this tumor presented but should feel tense rather than hard.

An ovarian cyst or tumor on a pedicle could account for a tumefaction in this area. However, this seems rather unlikely as this tumor could be palpated so definitely at the kidney region, and was apparently fixed; and usually a connection with the pelvic organs can be made out and the tumor would not be fixed.

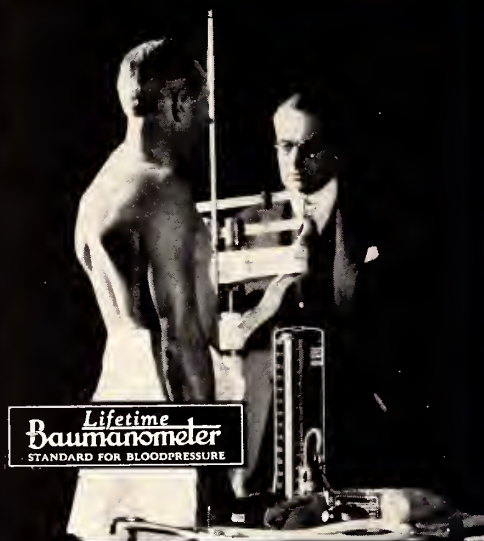
A gumma of the liver possibly could account for this mass; but I believe this can be dismissed, as there were no other manifestations of tertiary syphilis.

A carcinoma of the ascending colon without blood in the stool or other gastro-intestinal symptoms could account for obstruction of the pylorus (apparently due to pressure) and a mass in the flank. Mesenteric enlargements, cystic or malignant, would be more median in position and would not project into the loin and they seldom resemble renal tumors.

Abdominal aneurysm is rare, almost unknown in women and there would ordinarily be pulsation in the mass.

Retroperitoneal tumors are 4 kinds. The kidney and adrenal tumors usually give symptoms which

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allow a diagnosis. Diagnosis of a parietal or unattached retroperitoneal tumor usually is made only at operation or by a pathologist. Of 267 cases of non-renal-retroperitoneal tumors analyzed, only 47 were diagnosed prior to operation or death. These tumors occur twice as often in women, (178 cases) as in men (82 cases). Fifty per cent of these tumors were lipomata.

In a renal tumor the usual clinical symptoms and findings are hematuria, pain and tumor. Hematuria is the initial symptom in about 40%, pain in 30%, and tumor in 10%. This patient has pain and tumor, but no hematuria. This patient's condition even with the negative pyelogram could be considered one of hypernephroma.

Within the past 6 months I saw a middle aged, white woman, with a mass in the left side of the abdomen, which had been causing aching but with no hematuria. Pyelograms were negative. This patient was later operated. A large malignant tumor of the lower pole of the kidney was found.

My first diagnosis is hypernephroma (a general term for all kidney malignancies); my second is tumor of the adrenal; and third carcinoma of the ascending colon.

FRANK J. MILLOY: This history presents a case of a woman with an abdominal tumor which may be anybody's guess on account of lack of pathognomonic data. Therefore, we are confronted undoubtedly with a malignancy which often presents no pathognomonic signs except a nodular tumor. The problem to determine is the point of origin. Abdominal Hodgkins, malignant lymphoma, hypernephroma, lymphosarcoma and sarcoma as well as carcinoma must be considered. The clinical course of Hodgkins is usually not as rapid as this. The temperature suggests the Pel-Ebstein septic curve. But otherwise all other signs of Hodgkins and malignant lymphoma are lacking. Lympho-

sarcoma and sarcoma cannot be ruled out, but had they been suspected, the patient no doubt would have been subjected to x-ray therapy. Hypernephroma seemed the most likely diagnosis before operation but I doubt that it was correct.

There is one important bit of information in the history: the complete retention of the barium meal at the end of 6 hours. I believe that means an intrinsic lesion of the pylorus. It is hardly possible that an extrinsic lesion would produce that much obstruction by pressure, the 600 c.c. of gastric contents on the test meal signifies marked gastric retention. The free acidity does not eliminate gastric malignancy. I believe this patient had a generalized carcinomatosis. The absence of jaundice rules out the head of the pancreas, although it could be in the body of the pancreas. I suppose it could also be in the gall-bladder but not in the bile ducts. Carcinoma has been reported as primary in the liver; but I believe in this case the involvement of the liver is only metastatic. The high hemoglobin can easily be explained by the concentrated blood serum due to dehydration as a result of pyrexia and lack of fluid intake. The carcinoma probably involves the pelvis and could be either primary or secondary. I believe it is secondary. This would be a likely site of the Krunkenburg type of ovarian carcinoma. My diagnosis is carcinomatosis—primary in the pylorus. My second choice would be primary carcinoma of the colon.

HENRY LeROY FRANKLIN: The record points unmistakably to a tumor in the abdomen. The only question, as I see it, is what shall we call it.

One consultant thinks it cancer of the stomach, but cannot harmonize such a lesion with the high gastric acidity and the almost normal hemoglobin. To this I would add failure to find positive evidence by x-ray.



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Another, considered hypernephroma, but he probably didn't think so much about that diagnosis after he saw the normal pyelogram. Such a tumor in most instances should cause some alteration in the contour of the kidney pelvis.

Pancreatic tumor, either solid or cystic, seems improbable because of location.

Neoplasm or abscess of the liver or gall bladder would appear to be strongly probable, in view of the icterus, were it not for the fact that the tumor mass does not move with respiration and seems to be below the liver.

New growths of the peritoneum and intestines are considered. Not much can be said for or against them with information given. It would be of interest to know if there was fluid in the abdomen, and if so its character, also something about the bowel history and what the operation 6 years ago, was for.

She probably had syphilis, and had a general glandular enlargement. What is the connection?

One consultant thought syphilis out of the picture so far as the present condition is concerned. I am not so sure about that. Even if it does not account for the abdominal tumor, it may have some bearing on the glandular enlargement and liver pathology as evidenced by the slight jaundice.

Another physician suggested liver abscess. The description does not seem to make such a lesion likely. Then there is no leucocytosis, which one would expect in a liver abscess.

I have saved for the last what I think to be the best guess, i. e., a lymphosarcoma, springing from the retroperitoneal kidney region. As frequently happens, a fly gets into the picture, and this fly is the blood count. It should be higher with preponderance of lymphocytes. There is also good

hemoglobin, which also raises doubt. However, the blood picture is sometimes very little altered in such conditions.

The stomach retention and the liver dysfunction may well be due to pressure by the tumor. A tumor of this general type could account for the glandular enlargement. Otherwise, it is hard to get away from our old friend, syphilis.

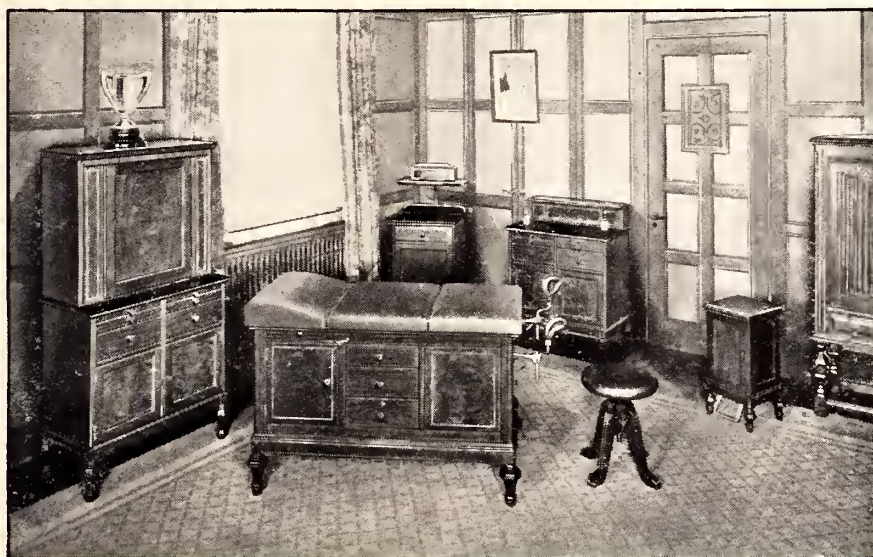
My guess: (1) Lymphosarcoma; (2) Gumma.

W. L. REID: This is a most unusual case. I wonder if we are entitled to make a positive diagnosis from the data at hand. She was operated for an abdominal tumor 6 years before her last illness. What was the nature of the tumor? We can only speculate. It was probably a uterine fibroid, but it could have been an ovarian malignancy.

Again the abdomen was said to be markedly distended. Distended with what? Gas? Fluid? Tumor? Or combination? Was there any appreciable amount of ascites found? There is no record of abdominal paracentesis.

Let us consider the probabilities. She had a painless swelling of the abdomen for 6 months prior to her hospitalization. That statement is decidedly against an inflammatory process. Moreover there was no appreciable leucocytosis.

I believe therefore the evidence points to a new growth. If it is a new growth it is likely malignant because of its rapid fatal course. A pyelogram revealed a normal right kidney and the physical examination localized the mass in the right upper quadrant under the costal margin. The x-ray showed evidence of pressure at or near the pylorus. The pathology could therefore be either in the liver, or the gall-bladder area or, if arising posteriorly, it could have originated from the right adrenal. If the mass were slightly nearer the



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pylorus it could be of gastric origin, but I am inclined to rule out stomach. Tumors of the left lobe of the liver, however, are easily confused with gastric carcinoma. Definite impairment of liver function would be in favor of direct liver involvement; but a liver function test was not done.

Syphilis of the liver must be considered. It is hard to distinguish from cancer but hepatic syphilis occurs far less frequently than hepatic cancer.

While portal cirrhosis cannot be completely ruled out, she should have had a consistent jaundice from the beginning of the illness, the spleen should have been enlarged, and the clinical course should have been much longer in duration.

Liver abscess is a possibility but not a probability because she would likely have had more pain, fever and leucocytosis had this been true. Moreover, liver abscesses are not usually hard, firm and nodular as was the mass described.

Carcinoma of the gall-bladder must be seriously considered because of the position of the mass, the slight jaundice, the localized "colicky" knife-like pain, and the apparent pressure at the pyloric outlet.

A tumor of the hepatic flexure of the colon should be mentioned. I believe, however, that the x-ray examination would have given a clue if there had been pathology in the colon.

A dermoid cyst can be ruled out by the relatively short period of her fatal illness as can hydatid cyst and amyloidosis. The location, contour, and consistency of the mass is against a cyst of the head of the pancreas. A carcinoma of the head of the pancreas would have produced more jaundice.

I believe that most of the evidence points to a malignancy of the gallbladder or left lobe of the liver, most likely carcinoma. And since the patient had syphilis my second choice would be syphilitic cirrhosis. (See autopsy report on page 444.)

The following case is for discussion by the Phoenix Clinical Club on November 16th. The physicians of our district are invited to discuss this case and send in their manuscripts for publication in December.

A 59 year old citrus grower entered the hospital Nov. 22 with the following history: burning in the abdomen for 3 years; vomiting for several weeks; unable to take food on account of "acidity;" frequent dark bloody stools for several weeks; loss of 40 pounds in weight in the last 3 months; feels badly; throughout the last 3 years he has had recurring spells of epigastric distress coming on 2 to 3 hours p. c. and always relieved by the next meal; he was frequently awakened after midnight with distress relieved by milk or some other food; he consulted several doctors who usually gave him alkaline powders which always relieved for varying intervals. Two years ago it was discovered that he had a strongly positive Wassermann and he had several courses of neo-arshenamine, mercury and bismuth. About 2 weeks before entering the hospital the pain in the epigastrium became almost constant and he vomited everything he ate.

Past history: He had a hard chancre 30 years ago and a nasal operation in 1928; his wife had several miscarriages, usually at 3 to 4 months of gestation.

Examination: Fairly well nourished male; slight evidence of loss of weight; head and neck negative; brachial vessels roll under the finger tips; no thyroid enlargement; no tracheal tug; lung expansion normal; no rales; heart sounds present; no murmurs; BP 130/70; pulse 70 to 92; temp. 98.6; respiration under 28. There is moderate tenderness in the epigastrium on deep pressure;

liver, spleen and kidneys not palable; skin clear; no jaundice; no pigmentation; no glandular enlargement.

Neurological examination: Right biceps reflex absent, left and both triceps present; pupils irregular but react to light and accommodation; both knee jerks absent; both Achilles jerks absent; no clonus; no Babinski; erector spinal absent he does not respond to questioning but is cooperative with limitations; incoherent; coordination tests unreliable; depressed.

Laboratory: Red cells 3,432,000; Hgb. 60%; 6,500; lymphs 26; polys, 74; urine 1022; slight trace of albumin; sugar negative; occasional hyaline cast; pus cells 1-2; occasional red cell; phenolphthalein elimination 1st specimen 100 c.c. 20%, and 2nd, 250 c.c. 22½%; chlorides 550 mg.; urea 19 mg.; NPN 23 mg; creatinine 1.2 mg; blood Wassermann negative; spinal fluid no increase in pressure; 10 cells mostly lymphocytes; Wassermann 4-plus; slight increase in globulin; gold 0001211000; Edwald 6 oz. One night aspiration total HCl 27; occult blood positive; microscopical negative. Barium meal outlined the stomach which was hypoasthenic; both curvatures seemed to be smooth; no excessive peristalsis; no barium thru the pylorus up to 6 hours.

Impression was that there might be a malignancy involving the duodenum with pyloric obstruction.

He was placed on regular Sippy treatment for ulcer with pyloric obstruction, three ounces of milk and cream every hour from 7 A.M. to 7 P.M. with alkaline powder on half hours and gastric lavage at 9:30 P.M. All pain was immediately relieved with this regime, but nothing seemed to leave the stomach which had to be pumped out every afternoon and at bed-time. He passed 500 c.c. urine daily so that water at least passed through. He was also given bismuth intravenously. With enema, he had daily bowel movements. Sour stomach frequently developed in the afternoons. He would vomit as much as a quart unless the stomach was pumped out 2 or 3 times between 3 P.M. and midnight.

On Dec. 2 he became irrational. On Dec. 3 hiccoughing began and carbon dioxide was administered. On Dec. 4 hiccoughing was more continuous and he was slightly more irrational. He began to be restless but not enough to require sedatives. About 11:30 A.M. on Dec. 4 he had a sudden, general marked cyanosis; pulse imperceptible, entire body rigid and respirations apparently ceased. In about 15 minutes color gradually returned and pulse was 74 of good quality. 1000 c.c. of 10% glucose was administered intravenously. Hiccoughing ceased after this spell. During the afternoon had frequent muscular contractions of the face and extremities. He had several light attacks of cyanosis and collapse during the evening and the twitchings became convulsions. Pulse did not become accelerated at any time. About 1:15 on Dec. 5, he again became suddenly cyanotic, pulse became imperceptible and respirations ceased; he was bathed in cold perspiration, and died suddenly.

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PUBLIC HEALTH NOTES

J. ROSSLYN EARP, Dr. P. H.
Director, New Mexico State Bureau of
Public Health.

The **Rocky Mountain Tuberculosis Conference** was highly successful. Among the galaxy of distinguished visitors were the chief exponents of the two liveliest controversies in the field of tuberculosis. Doctor J. A. Myers of the University of Minneapolis presented the need for epidemiological control brilliantly without raising a controversial issue. Doctor S. A. Petroff listened to Doctor H. J. Corper's conclusions about the fixity of the avirulent strains of tubercle bacilli and even heard Doctor Corper propose to give them a name to themselves—microbacterium nusquam phimatisis if I remember correctly—without making any comment; Doctor Corper successfully eluded the challenge to divulge the secrets of his experimental material. If the journalist in your correspondence was cheated the scientist was not. Excellent papers were read and will be sought for publication in this journal. Doctor Corper was elected president for the ensuing year.

Dysentery research: The summer's finding have not been tabulated, but Doctor A. V. Hardy presented round figures with conclusions as to their significance and the indications for further study in a conference with the staff of the New Mexico Bureau of Public Health. Bacteriological studies have been made of some 400 cases of diarrhea and of 500 family contacts. Three stool specimens were taken from each case and from each contact. Also stool specimens were examined from about 1000 individuals representing the healthy population of selected areas. The generosity with which the general public contributed stool specimens was a pleasant surprise.

The incidence of cysts of *E. histolytica* among the general population is surprisingly high—from 20 to 30% in Indian pueblos and almost as high among the Spanish speaking white population. Craig¹ gives the incidence in the United States as from 5 to 10%. It is surprising that so few cases of amebic dysentery are reported. One wonders how many cases never come to the attention of the medical profession. Hookworm ova and ascaris ova were discovered, each in one specimen only. A few pinworms were found and a very few small tapeworms.

About 5% of those sampled was found to carry dysentery bacilli. Specific bacilli were isolated from about one-third of all cases of diarrhea and from more than one-half of the fatal cases. Most of these bacilli belong to the Flexner-Sonne group, about one-third being Sonne. A score or so organisms have been isolated which belong to the Shiga group by cultural characteristics but they have not yet been tested against specific serum.

Not one-half of the stool specimens bacteriologically positive showed the blood and mucous characteristic of dysentery. In view of this Doctor Hardy urged, and those at the conference agreed with him, that the common practice of giving an initial purge with castor oil is extremely dangerous. In view of the elaborate technique necessary to isolate the organisms of dysentery it is impossible for the laboratory to report back to the practicing physician in time to influence his treatment of any given case. We ask for specimens in order that we may know what is the prevailing picture in each community. Particularly we are anxious for specimens in the winter months when diarrhea is not so common and hence there is

danger of overloading the laboratory. It is important to know what proportion of winter diarrheas are due to dysentery bacilli.

Some 300 organisms of the *Salmonella* family have been isolated and are still being made to jump the bacteriological hurdles. We have still to learn much not only about this particular sample but also about the pathogenicity of the whole family. Bowcott and McNee² have just reported from England a human infection with a member of this group that causes hog cholera in America.

Pneumonia: When these notes appear the pneumonia season will be upon us. Two recent publications³ on the serotherapy of pneumonia appear to me to be of such importance that I shall be glad to help any physician to get copies should he have difficulty in doing so. They also may be borrowed from our library.

The following table shows that even the recorded rates for New Mexico are well in excess of those for the United States even though in New Mexico many pneumonia deaths must be hidden amongst those from causes unknown.

Year	PNEUMONIA DEATH RATE PER 100,000 POPULATION		All Forms		Lobar Pneumonia	
	U.S.A.	New Mexico	U.S.A.	New Mexico	U.S.A.	New Mexico
1932	76.9	92.3	41.2	44.7		
1933	69.2	104.2	36.4	38.6		
1934	79.6	92.5	43.3	50.5		
1935		107.6		58.4		

The higher proportion of lobar pneumonia to all pneumonia deaths in New Mexico during 1934 and 1935 is probably attributable to more accurate reporting.

REFERENCES

1. Craig, C. F.: Amebiasis in Musser's Internal Medicine, Lee & Febiger, 1934.
2. Boycott, J. and McNee, J. W.: Human Infection with the American Hog-cholera Bacillus, *Lancet* 11:741, Sept. 26, 1936.

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\$200,000 deposited with State of Nebraska for our members' protection.

3. Clinical Aspects of Pneumococcus Pneumonia. Circular 20 Bureau of Pneumonia Control, New York State Department of Health, Albany, New York.

4. Lord, F. T. and Heffron, R.: Lobar Pneumonia and Serum Therapy, p. 91, New York. The Commonwealth Fund, \$1.00.

Meeting of El Paso City-County Hospital

(Autopsy Findings on case report in October issue Southwestern Medicine).

(Continued from October issue)

DR. RAWLINGS: Dr. Waite did an autopsy on this case and it showed a mass partially encircling the stomach beyond the antrum, but without coming in any way from the mucosa itself. There was a mass which involved entirely the gall bladder and it was carcinomatous in origin and everything else about the post-mortem examination was negative. The diagnosis was primary carcinoma of the gall bladder with metastasis encircling the stomach.

This is a very interesting case. S. Weiss in "Diseases of Liver, Gall Bladder and Pancreas" says that 5 to 6% of all carcinomas in the human body occur in the gall bladder.

It is 5th in the order of malignancies of the digestive organs. The organs rank as follows: stomach, cecum, rectum, esophagus, gall bladder, liver, and appendix. Carcinoma of the gall-bladder is 3 to 4 times as frequent as is carcinoma of the bile ducts.

Smithies in an estimate in 1000 cases of gall bladder diseases of various types found the incidence of cancer to be 3.1%. Of this 2.3% were primary carcinomas and 0.8% secondary. An outstanding feature noted by many observers, is gall stones in primary carcinosis of the gall bladder. Others have varying figures. Kaufmann quoting data from Basel autopsies shows that in 86% of primary carcinomas gallstones are present in 10 to 12% of all individuals examined after death and that well over 50% of all individuals at autopsy examinations show gall bladder disease. Most of these carcinomas have a tendency to start in the fundus, though in almost all cases, as shown by Futterer, the cancer involves the entire organ making it difficult to decide its origin. Adhesions to the colon with perforation to these organs may result. Slade showed that in 58% of cases in which a marked inflammatory thickening of the walls of the gall bladder was found, carcinoma cells were present.

Rolleston believes that the calculi predispose to fresh attacks of cholecystitis, thereby producing a pre-cancerous condition of the gall bladder.

Metastases occur to the liver in over 50% of all cases. In 30 cases, there was secondary involvement of lymph nodes in 11 cases, liver 8, pancreas 6, stomach 2, and the omentum and hepatic flexure 1 each. Symptoms are those of cholecystitis and stones plus adhesions.

Bret in 1898 and Jourdan in 1896 showed the interval between the first attack of colic and development of carcinoma to cover periods of 20 and 25 years respectively. Early symptoms are gastrointestinal disturbances, belching, vomiting and anorexia, loss of weight, pain and at times colic, while only later in the disease does a tumor reveal itself. With time, the tumor is apt to increase and become nodular. Jaundice is the outstanding symptom and is usually persistent. There may be an associated catarrhal cholangitis. Ascites may be present.

During the course of suppurative acute perihepatitis, peritonitis, peri-duodenal abscess, cholecystitis, thrombosis of portal veins and lateral sacculation may occur. Often secondary involvement of other organs produce the outstanding symptoms. According to these, Schmidt has des-

ignated 5 types of carcinomatous disease of the gall bladder; hepatic, cholangitis, peri-duodenal, stomachic and intestinal. The urine shows bile and the feces an absence of urobilinogen.

Diagnosis: It is easy in the presence of cholelithiasis and severe cholecystitis, to overlook a cancerous condition. However, when we remember that approximately 5% of all cases of gall stones have cancerous gall bladders, we must think of this condition more often. The average age is 50 to 57. A febrile course is often present. The condition must be differentiated from cancer, amyloid, echinococcus cyst and carcinoma of the head of the pancreas.

There is little treatment. Laparotomy is usually advised, if patient's condition will permit it.

Roentgenography of the gall bladder and digestive system, as well as duodenal intubation and careful studies of stool and urine are absolutely necessary aids to any diagnosis, while a careful evaluation of history, physical findings, course of disease and laboratory data will aid in making the diagnosis.

The case before us was peculiar in that the outstanding feature was an obstructive lesion of the pylorus of the stomach with a mass in the right hypochondrium. There was no record of bile in the urine, nor of its absence from the stool in the form of urobilinogen. The hemoglobin and red cell count were virtually normal and the gastric contents were not low in acidity. The patient's loss of weight was not extreme.

Jaundice and some fever was the only consistent feature beside the presence of the tumor itself that should have made us suspect the correct diagnosis.

ARIZONA NEWS ITEMS

Dr. and Mrs. Kramer M. Gilbert of Chandler, Ariz., spent a part of the summer in San Diego and Long Beach, Calif. They returned home early in October.

The Arizona medical auxiliary sent a group of 15 of its members to Prescott to assist in organizing an auxiliary of the Yavapai County Medical Society. Mrs. James M. Meason of Chandler, Ariz., president of the state auxiliary headed the Maricopa group.

Dr. F. W. Butler of Safford recently treated an 11-year-old girl who was bitten by a black widow spider. The newspaper account is that he had to work with her several hours before she was out of danger.

Dr. Fred G. Holmes has been elected to the board of the Young Men's Christian Association of Phoenix.

Dr. Guy C. French spent a short vacation in Prescott during the latter part of September.

Dr. Robert Flinn has given several most interesting addresses before service clubs in Phoenix upon the European situation. We were fortunate enough to hear one of these and it was received with tremendous appreciation.

Dr. George A. Hays, state epidemiologist addressed the 18th annual convention of the Arizona State Nurses Association. He reported that 10 per cent of the 2500 school children who have already been tested in Yavapai county acted positively to skin test for tuberculosis and 60 per cent of these were found to have demonstrable infection of the lungs.

Dr. A. N. Crain, member of the Maricopa county

health unit has given physical examinations to athletes of a number of the high schools of Maricopa county.

Dr. George O. Bassett of Prescott, addressed the Arizona State Nurses Association upon the subject of "Embolism."

Dr. E. D. Berends, psychiatrist at the Arizona State Hospital, was recently married to Lucille Burrell of Tucson, Arizona. They spent their honeymoon at the Grand Canyon.

Dr. Geo. F. Manning, director of the health unit of Gila county has been conducting baby clinics throughout the county, especially in the destitute sections.

Dr. Fred C. Jordan, president of the Orpheus club during the past year, presided at the last meeting of the club during the latter part of October. At this meeting he was elected to the board of the club.

Dr. C. E. Yount of Prescott, addressed the Arizona State Nurses Association upon the subject of "First Aid Stations."

Dr. Will Wilkinson spent part of the summer in Los Angeles and there met 3 of his old class mates, Drs. Frank E. Delting, E. H. Wiley and Franz H. Brant, now located in Los Angeles and had lunch with them in the Los Angeles County Medical building.

Dr. Fred E. Cooley, who is an interne in Fresno, Calif., spent a few days in Phoenix visiting with his parents, Mr. and Mrs. Fred Cooley of 845 N. 4th avenue.

Dr. Harry D. Atwood of Ajo, Ariz., has been recently elevated to the post of chief-surgeon for the Phelps-Dodge Cornelia Branch at Ajo, Ariz.

Dr. A. M. Tuthill attended a meeting of the American College of Surgeons at Philadelphia and the semi-annual meeting of the Adjutant Generals Association and the annual convention of the National Guard Association of the United States at Providence, R. I. He also conferred with the war department officials in Washington, D. C.

Dr M. G. Fronske of Flagstaff, Ariz., was called to St. Louis because of the death of his father. Dr. Fronske has just returned from Phoenix where he had been attending a conference of the executive board of the Boy Scout organization in Arizona.

Dr. O. B. Patton has resigned as chief-surgeon of Phelps-Dodge, Cornelia branch of Ajo, Ariz.

Dr. C. R. Swackhamer of Superior, Ariz., was in Phoenix during the early part of October and he called into the editorial office to see how the work on **SOUTHWESTERN MEDICINE** is coming along.

Dr. R. J. Stroud addressed the Tempe Rotary and Lions clubs about his travels in Europe. He has a large number of pictures he took, both still and motion, which he will be showing in the near future. The talk which we were privileged to hear was extremely interesting and much enjoyed by the audience.

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Williams, Ariz., died October 9, 1936, after a lingering illness. She was a graduate of Stanford university in the class of 1911. A son, Clymer, is a senior in the University of Arizona.

Dr. D. R. Gaskins and Dr. Kim Bannister tied in the 2nd and 3rd flights respectively in the recent Phoenix Golf Tournament.

BOOK REVIEWS

A TEXTBOOK OF OBSTETRICS: By Edward A. Schumann, A. B., M. D., F.A.C.S., Prof. of Obstetrics, School of Medicine, University of Pennsylvania; Surgeon-in-Chief, Kensington Hospital for Women; Gynecologist and Obstetrician to Philadelphia General and Memorial hospitals; Obstetrician to Chestnut Hill Hospital; Consulting Gynecologist to Frankfort, Jewish, Burlington County and Rush Hospitals; 780 pages with 581 illustrations on 497 figures; Philadelphia and London: W. B. Saunders Co., 1936; cloth, \$6.50 net.

The book has everything to be desired, completeness, simplicity of style, clearness and a thoroughly sane presentation of this exacting field. Much of the unimportant theoretical material found in larger volumes has been omitted making it a less ponderous but extremely more practical text. The newer thoughts and practices in obstetrics are accurately reflected.

An admirable chapter is devoted to "Analgesia and Anesthesia in Obstetrics." X-ray pelvimetry is described fully, the reader being left to his own judgment as to its value. Chapters on the "Conduct of Normal Labor," "Toxemias of Pregnancy," and the "Obstetrical Forceps" are forcefully presented with no trace of ambiguity or excessive wordiness.

The book is an admirable addition to the obstetrical literature. Student, practitioner, and specialist will find its fine presentation truly satisfying.

A MANUAL OF PHARMACOLOGY by Torald Sollmann, M. D., Prof. of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University, Cleveland, Ohio; Fifth Edition, entirely reset; 1190 pages with 22 illustrations; Philadelphia and London, W. B. Saunders Co.; 1936; cloth \$7.50 net.

Dr. Sollmann's Pharmacology has been a standard text in medical schools for so long that practically every physician now practicing is familiar with it. Prof. Sollmann has probably been the leading pharmacologist in America for the last 30 years. He has always kept in mind the practical importance of drugs as therapeutic agents; therefore, the book is especially practical for physicians and should have a wide sale.

SURGICAL CLINICS OF NORTH AMERICA: Issued serially, one number every other month; Volume 16, New York Number, June, 1936; 277 pages with 79 illustrations; Paper \$12.00; Cloth, \$16.00 net; Philadelphia and London; W. B. Saunders Company, 1936.

This number has the usual selection of excellent subjects and discussions. One of the most interesting articles in this volume is "Pneumococcus Type VII Septicemia, Secondary to Paranasal Sinus Infection following Trauma." The patient suffered a fracture of the base of the skull through the petrous portion of the temporal bone. He also had a fracture of the mandible and forearm. The petrous fracture seemed to have acted as a direct pathway of infection from the nasopharynx to the mastoid, with the production of an acute

mastoiditis and a secondary sinus thrombosis resulting in bacteremia which produced an acute aortic endocarditis providing a source of continuous bacterial supply into the general circulation. This strain of pneumococci rarely produces bacterial endocarditis. The accident which he suffered was directly responsible for the spread of the pneumococci, although he had harbored them in his system all along.

There are other articles worthy of study. There are 22 interesting and instructive articles in this volume.

PRINCIPLES OF BIOCHEMISTRY: by Albert P. Mathews, Andrew Carnegie, Professor of Biochemistry, University of Cincinnati, Cincinnati, Ohio; William Wood and Company; Baltimore; 1936.

Physicians generally are recognizing that a large part of the practice of medicine is founded upon the biochemistry of the body and that a fundamental knowledge in this is equal in importance to that in anatomy. Dr. Mathews has been teaching physiological chemistry for nearly 40 years. He recognizes the difficulty of the subject and the inadequacy of the training of many of the students to fully comprehend it and the importance of their being well grounded. He has written this book so as to simplify the subject as much as possible.

There are six parts to the book: Chemistry and Metabolism of the Glucides, Chemistry and Metabolism of the Lipides, Chemistry and Metabolism of the Proteins, The Special Chemistry of Important Tissues, and The Catalytic Agents of Growth and Development — Vitamins and Hormones.

Probably no man on the American Continent is so well qualified as A. P. Mathews to write a book of this type. We recommend the book to all physicians. It would be well to place this on the bedside table for frequent excursions into it during the sleepless nights.

The books contains 512 pages, but it is light in weight therefore easy to handle. The publishers have done their work in a most commendable fashion.

DIET IN SINUS INFECTIONS AND COLDS: by Egon V. Ullmann, M. D., Formerly special lecturer for Biology at the Oregon State College; Instructor at the First Medical Clinic (Prof. Hajek) at the University of Vienna, Assistant Physician at the Otolaryngological Clinic (Prof. Neumann) at the University of Vienna, Member of the research staff of the State Serum Institute of Austria.

Dr. Ullman's book is based upon the thesis that too much acid-ash food tends to predispose to colds and sinus infections. It is largely an exposition of the doctor's own experience. He forbids the use of canned foods, table salt, salted butter, alcohol, candies, sardines, smoked meats and fish, bacon, ham, sausages, herring, caviar, pickles, catsup, highly seasoned sauces, spiced cheeses, preserved olives, salted almonds, crackers, salt sticks and hot biscuits. He limits the amount of meat to 16 ounces per week. He orders one potato (not fried) to be eaten with every main meal, luncheon and dinner. He recommends one ounce of sugar and allows one cup of weak tea or coffee per day. He says one should drink a quart of milk and a pint of cream per day and recommends raw milk from reliable cows. He also prefers buttermilk, kefir, yogurth, cottage cheese, and Philadelphia cream cheese. He recommends plenty of fresh fruits and vegetables; he lets his patients choose their own vegetables and says that preserved fruits must have no acid in them.

ACIDOSIS *or* ALKALOSIS?

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Acids galore are normally formed in the body and eliminated—carbonic, lactic, phosphoric and sulphuric. They are almost completely neutralized by base from cells, intercellular fluids and blood plasma. The body fluids thus maintain the normal faint alkalinity of pH 7.4.

But the defensive mechanisms of the body capable of preventing changes in reaction may be deranged in disease with consequent acidosis or alkalosis. Acidosis is associated with hyperpnea, diarrhea, dehydration, anoxemia, circulatory or renal insufficiency; alkalosis with excessive breathing, vomiting.

Treatment of acidosis is designed primarily to correct the underlying cause. In most types, fluids and fruit juices with Karo are forced every hour. In cases associated with ketosis (except where it is a disturbance in carbohydrate metabolism, as in diabetes mellitus) 20% dextrose is given intravenously at repeated intervals. In case of diabetes, insulin is given, by some authorities, simultaneously one unit for each gram of dextrose, until the condition is controlled.

Treatment of alkalosis depends upon the cause. The most common variety in children is that resulting from prolonged vomiting with loss of acid, salt and body water. No food is given by mouth except fluids with Karo, and saline intravenously. If alkalosis is the result of alkali administration in the presence of nephritis with poor kidney excretion of salts, large amounts of fluids with Karo will favor excess base elimination. Alkalosis from excess alkali administration is alleviated by forcing fluids with Karo.

In both acidosis and alkalosis, Karo is a carbohydrate of choice in the emergency of treatment. Karo consists of dextrans, maltose and dextrose (with a small percentage of sucrose added for flavor), not readily fermentable, rapidly absorbed and effectively utilized.

CAUSES OF ACIDOSIS

EXCESSIVE ACID FORMATION

Acid	Disturbance
Aceto-acetic	Starvation
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	Diabetes
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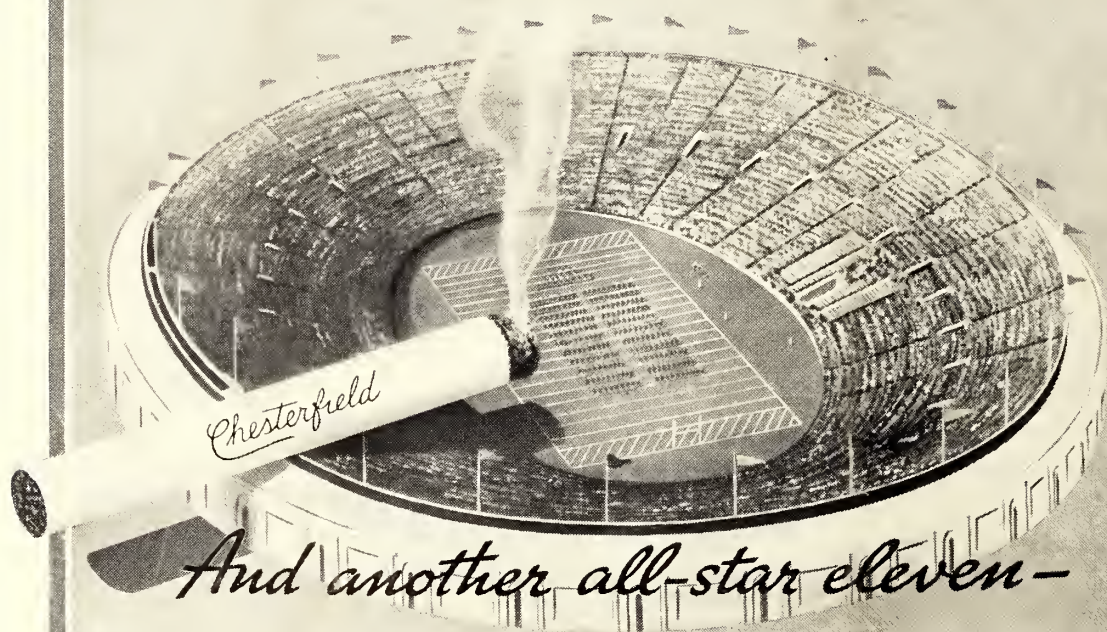


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VOL. XX

DECEMBER, 1936

No. 12

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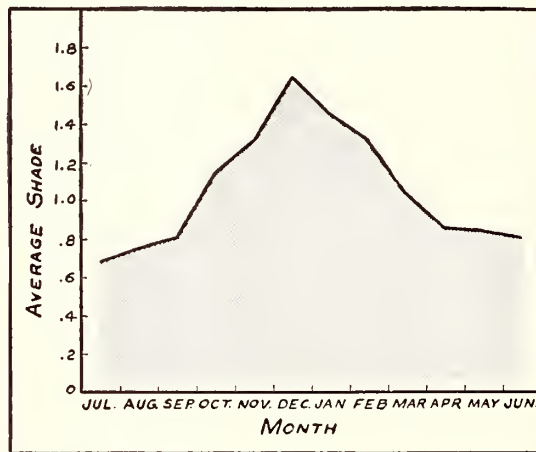
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(1) 1935. Nutrition Abstracts and Reviews 4, 709.
(2) The Pharmacopoeia of the United States of America, Eleventh Decennial Revision, p. 261.

(3) 1936. Report of the Council, J. Amer. Med. Assoc. 106, 1733.
(4) 1935. J. Assoc. Official Agr. Chem. 18, 610.

(5) 1935. J. Home Econ. 27, 658.
(6) 1936. Food Research 1, 223.
(7) 1935. J. Nutrition 9, 667.

This is the nineteenth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



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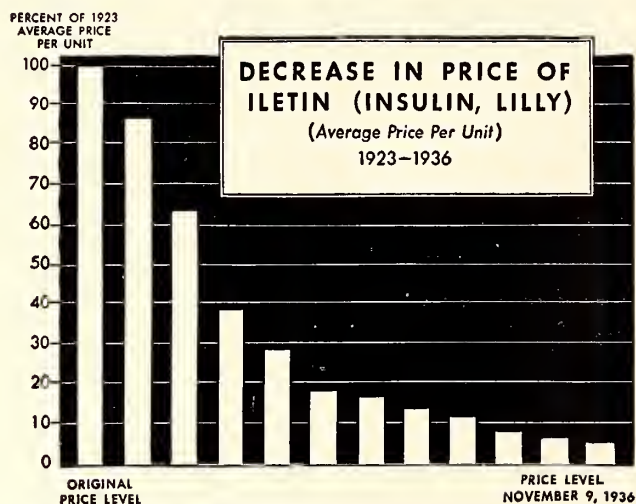
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VOL. XX.

DECEMBER, 1936

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TRENDS IN THE CARE OF INDIGENT SICK

ROBERT O. BROWN, M. D., F. A. C. P.
Santa Fe, New Mexico

(Read before the Rocky Mountain Tuberculosis Conference
at Albuquerque, July, 1936).

The problem of the care of the indigent sick is a confused and difficult one. It bids fair to continue imperfectly solved for years. This meeting is one of many that must be held, between sociologists, social workers, doctors and governmental officials to clear up the difficulties. Can we now agree in a few general statements.

The care of the indigent sick is now generally regarded and in the future will be regarded universally, as a public responsibility, rather than a private charity. Private donations to hospitals, clinics, or individual sick, will be made, but when fully adequate provision is not made from private funds the Government will be expected, as a matter of course, to supply them. This is almost the case now.

Socialized medicine, if not already here, is certainly well on the way, at least as far as paying for medical care. Modern "adequate medical care," because of its time requirements, as well as financial costs, is so expensive that the majority of the medical profession realizes it can not carry all the burden, and I think the rest of the world also realizes it should not be expected to. Some in the medical profession insist that the profession is actually giving the indigent as good care as it gives those able to pay their way, and that everybody is or should be content. In even the large cities with highly organized and heavily endowed clinics and hospitals, I can not believe this entirely true, and it seems perfectly incredible in rural communities, especially with the vast distances of New Mexico. A failure to give adequate medical care

to the indigent sick does not fit in with modern demands.

As a corollary to these theses, that care of the indigent sick is a community responsibility and that they are not getting it now we have the thesis that changes must be made to provide such care. Erecting a bugaboo labeling it "state medicine" and railing at it is useless. The changes to be made will be unpopular with some of us if only because the new conditions are not those to which we are accustomed. Changes actually are being made and are fairly clearly typified in the field with which most of us here are best acquainted.

In the tuberculosis sanatoria of the United States in 1904 there were about 8000 beds for tuberculosis mostly in private sanatoria. In 1923 there were 66,000 beds in 600 sanatoria, of which 274 were governmentally supported—federal 40, state 58, county 224, city 52, and privately supported 226. In 1928, there were 72,723 beds in 608 sanatoria—401 governmentally supported, federal 44, state, county and city 357, private and semi-private 251. In 1935, there were 95,198 beds in 1,240 institutions, 807 governmentally supported—federal 169, state 284, county 250, city 80, city-county 24, and private 433. From 1923 to 1935 there has been an increase of 400% in federal sanatoria and departments—500% in state, 100% in county, 50% in city,, 24% in city-county — and of 200% in private, institutions. In 1935 the bed population was 77,532 in governmentally supported institutions (51,129 of them state and county and city) and 17,666 in private institutoins. Does not this show a definite trend toward care of the indigent sick by governmental agencies?

I have the strong impression that the increase in governmental facilities for care of the mentally ill would show much the same trend. We all know, in a general way, of the assumption of the care of syphilis, and to a lesser extent of gonorrhea, by public clinics

supported by governmental agencies. The experience with the syphilis problem in the Scandinavian countries following the institution of free government clinics for venereal diseases, seems to justify this method of care of these diseases, and is a strong argument for "socialized medicine." We have seen the effects of the crusades for preventive vaccinations and inoculations in this country, in peace and war, and in prosperity and disaster, carried on chiefly by governmental agencies. To belittle these achievements is to close our eyes to facts.

Closing one's eyes to facts is the surest way to run into disaster. I cite facts as to some health problems in New Mexico to consider in relation to Mr. Fay Guthrie's plans for the care of the indigent sick of that state. The New Mexico Tuberculosis Association survey in 1934 by Mantoux testing on 4,755 children in 5 counties showed 19% positive reactions in the Spanish-American, and 13.2% in the Anglo-American group, or 19,274 children between 5 and 14 years of age infected with tubercle bacilli. Of 1,044 adults examined, 8.23% were "suspect" or "definitely diagnosed," 3.88% were "definitely diagnosed" tuberculous, and, as a rule, on further investigation "suspect" usually is changed to "definitely diagnosed." In the Spanish-American the "suspect" and "definitely diagnosed" are 3.6%, and in the Anglo-American 14.8%. This means 12,236 "definitely diagnosed" and 22,662 "suspect," and "definitely diagnosed," adults in the state. Note that although the percentage of "definitely diagnosed" and "suspect" is 3 times as high in the adult Anglo-American as in the Spanish group, the percentage of positive Mantoux tests is nearly twice as high in the Spanish-American children as in the Anglo-American. What's to be done with these 12,236 definitely diagnosed adults, and the 19,274 reacting children, or the total of probably and definitely diagnosed tuberculous adults and children of 41,936? Can 400 physicians care for them in addition to their other work, in the patients' homes, and largely without pay?

I believe it is accepted that there should be one bed for tuberculosis for every death from it per year; this would mean 600 beds for New Mexico. We have, exclusive of federal insti-

tutions 677 beds in private hospitals and sanatoria, and 80 in the Socorro Infirmary. But New Mexico has a large import of tuberculosis, and these 677 beds are to take care of them. They are not all used now; but when, and if, they are so used again what of our own citizens?

In a Wassermann survey in New Mexico in 1934, one of the largest ever made in this country, 5,237 random samples, 50.9 per 1,000 were definitely positive and since not all cases of syphilis have at all times a positive Wassermann, this means a probable incidence of 78.3 per 1,000—a total of at least 21,100 cases in the state exclusive of Indians. Of these, 1 in 20 is under medical care. Can the profession, alone, take care of these?

I could go on indefinitely multiplying examples of our problems: bi-lingualism, and how to reach the two groups; economics both amongst the patients and the various governmental groups; the lack of general and health education of the public, with resultant difficulty in getting the patients to accept medical care; the effect of distances between the doctor and prospective patients, (about Taos the percent of births attended by physicians dropped from 33 1/3% to 10%, when a ten-mile limit from town was passed); the effect of the age-old customs, especially of the Spanish people, on the spread of disease—are a few samples.

From the magnitude of the problem, the inference seems to me inescapable that we must look to the government for help in the care of our indigent sick. That is socialized medicine; but it need not be that bugaboo "state medicine." If it is not to be, representatives of the Government, sociologists, and the doctors, must sit down together, face facts, and figure out new methods, which methods will have to be tried and modified and retried for many years to come, before the final solution is achieved. Administration of medical relief might well be left to the medical profession, along some definite plan, as suggested by Mr. Guthrie, but the financing of that relief, including pay for the physician, can not be upon the medical profession, but must be a community burden.

Trends in Care of Indigent Sick by Public Agencies

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(Read before the Rocky Mountain Tuberculosis Conference.)

The trend for care for the indigent sick has been brought about by changes in the social and economic problems of the average citizens. This has effected definite changes in the organization and administration of public health services and similar changes of medical care will inevitably follow. I attempt to portray the role of the medical and social profession in this change.

I have been told that "if a social worker was performing her duties properly, she would tend to work herself out of a position, that is, the more people rehabilitated the less demand for social service work." According to this standard, during the past few years, the average practicing physician must think most social workers have shirked their duties. In the opinion of many physicians social workers have exerted efforts to bring as many clients as possible under their guidance in order that their positions would be more secure, or possibly a new position might be created. This idea is fallacious. A definite lack of understanding has existed between the medical and the social service professions. This has been due largely to the emergency nature of the medical relief, lack of sympathy for the problems of the physician and the attempts by social workers to authorize medical care and to decide not only on the eligibility of the client but also of the physician which was due in many instances to the lack of any other agency or committee to assume this responsibility.

The physician naturally associates the social worker with socialized medicine. However, medical sociology is a relatively new science and must go through a period of transition the same as other sciences have done. The health officer of today, after 100 years or more, is not considered a glorified sanitary policeman, but a practitioner of preventive medicine. No doubt social service work will have its Hippocrates or Florence Nightingale. The physician, the public health nurse and the social worker are repeatedly confronted with

mutual problems and there is a great need for closer relationship and team work in order that the common objective the promotion of human welfare be reached. This is particularly true in any plan for tuberculosis control because it "becomes just as necessary to know what kind of patient the disease has as it is to know what kind of disease the patient has". The medical social worker must be considered as an integral part of any organized plan to promote the betterment of human welfare.

The most recent plan to furnish medical care for the indigent sick was inaugurated by the F. E. R. A. under rules and regulations No. 7. The Federal government declared 2 principles of importance as follows: "The conservation of the public health is a primary function of our government," and "the physician should be compensated for his service to the unemployed and their families." The latter policy was adopted in spite of the fact that only about 1 of 75 million of F. E. R. A. funds monthly was to be spent for medical relief. In other words, the cost of medical care was not considered a part of the basic budget as were food, shelter and clothing. Other chief reasons why this program was not more successful in my opinion are as follows:

1. Exigencies of various types which forestalled any preliminary educative or informative measures to be presented to the public or practicing physicians.
2. Apparent lack of, or failure to consider, medical advice in the original planning of the program.
3. Failure to provide adequate hospital care.
4. Failure to correlate activities with those of public health services.

The F. E. R. A. program for medical care was not an entire failure. Many of the indigent sick otherwise would have gone without medical attention; in the transient centers many cases of syphilis were rendered non-infectious and some cases of early tuberculosis were diagnosed and hospitalized; the program had certain educational effects; and its experimental value should not be underestimated.

The practicing physician, however, has been the target of so many propagandists and the victim of such extensive experimentation he has become opposed to most any new plan for administration of health services. His Hip-

pocratic ideals have not permitted him to keep pace with the changing social and economic conditions. He is at heart an individualist and slow to consider his patient a social unit and not simply a case of tuberculosis or some other disease. He does not have time to consider the social and economic conditions that were probably the indirect cause of the tuberculous process and that it is important to know the "sociological pathology as well as the individual pathology."

Many physicians will immediately raise the cry of "state medicine" without perception of what the term means. State medicine is really any medical service paid for by a government, such as the operation of a health department, of a tuberculosis sanatorium or an insane asylum.

There is a definite tendency in Colorado for physicians to demand compensation from the government for treatment of their indigent patients. This has been best illustrated by expression of opinion of physicians regarding the crippled children program.

I think the State Division of Public Health of Colorado is fortunate in being responsible for the administration of the crippled children program. Here is an opportunity for combined efforts of social and medical public health professions which may demonstrate that physicians can be paid for services to the indigent by an official agency without socialization of medicine. The physicians have expressed hope that the crippled children program would not be restricted to indigents, but that they would be able to care for the low income group who can assume some of the financial obligation. The physicians also feel that if this service is restricted to the indigents and to the cases whose family income is below the level of subsistence, that full benefits of medical and social rehabilitation will not be attained; for the chief purpose of this program is to rehabilitate the physically handicapped, mentally competent children to become self-supporting citizens of Colorado. They have also suggested that if the orthopedist receives pay for his services to the crippled indigent, other physicians should also receive remuneration for medical care rendered the indigent sick. These suggestions offer considerable food for thought.

A health problem is considered as such only when it becomes amenable to solution through

systematized social action. It is becoming difficult to distinguish between preventive medicine and clinical medicine. In my opinion the provision of adequate medical care for the indigent sick should be considered as a health problem and become a function of public health. Organized medicine, however, will never agree to being organized and administered by a social agency. This will necessitate administration by the federal health bureaus and the respective state, county and district health departments, with social service as an adjunct.

The final plan would be similar to the security plan for health work at the present time. That is, a federal, state and county participating plan in which funds would be made available for the medical care of the indigent sick, with the allotments to each state and county varying according to the number and type of cases. This, to me, would present a plan whereby the tuberculous indigents would be properly cared for. In other words, each transient indigent could be charged to his resident state or the allotment from the federal government increased accordingly. This would probably necessitate a district hospital plan which I believe would be practical for Colorado.

Much factual data will become available at the completion of the national health survey being conducted under supervision of the United States Public Health Service, in which 800,000 families representing various economic and social levels are being studied as to age, number of people to household, whether they have been immunized against smallpox, diphtheria, the nature of illnesses suffered by the family, etc.

Other data have been made available by the F. E. R. A., by experimental plans of the American Medical Association and by various foundations and agencies.

In considering any public health problem, the tuberculosis association must be given due credit for the good work which has been done and no doubt will continue to be done under their supervision. They have carried on the tuberculosis control work of the official agency in many states and will exert a strong influence for any proposed plan or measure to care for the indigent sick.

In formulating a workable solution to this public health problem, one agency or profes-

sion should not attempt coercive or collusive plans against another, but we should weigh the evidence carefully and work towards the common objective, the protection of public health and the promotion of human welfare.

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DERMATITIS: ATOPIC AND CONTACT (ECZEMA)

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(Presented before the New Mexico Medical Society at its 54th annual session at Carlsbad, N. M., May 6-8, 1936).

The role of **hypersensitivity** in the different forms of **dermatitis** has been the subject of considerable study in the dermatologic clinics of Europe and America during the last decade. Although a great deal of progress has been made, there is much to be learned about this state and its relation to dermatitis. If the investigator is inclined to be an enthusiast for his particular line of investigation, he is likely to be led astray and to misinterpret his findings. One not only must be familiar with the diseases he is investigating, their habits of exacerbation and remission, and with other diseases which are more or less similar, but he must maintain an open mind for all possibilities. For example, if a patient has improved on a change of diet, one must be sure that the improvement was not due to a simultaneous change of environment, of clothing, of degree of activity or relaxation. A patient with a severe dermatitis of external or contact origin might be put to bed with a different diet, and the improvement laid to the diet when in reality it was due to avoidance of contact with the external irritant. To make the case more difficult of interpretation, the dermatitis does not necessarily return at once on exposure to the contact substance. The 2 requisites for progress in these studies are a broad knowledge of the conditions being investigated, and an open mind.

The two forms of dermatitis in which hypersensitivity is recognized as playing a more or less definite part, are atopic dermatitis or neu-

rodermatitis, and contact dermatitis or eczema. Although these 2 are usually quite different clinically, histologically, and in their history, there are occasional mixed forms of dermatitis caused by several factors operating simultaneously, which are difficult to classify. Changes may occur in the skin from long continued scratching, infection and strong medication, which mask the original character of the dermatitis. However, careful search usually, though not always, will give the dermatologist a clue to the nature of the condition, and indicate the line of investigation most likely to yield information of value.

In adult **atopic dermatitis** there is, in a large proportion of cases, a history of an erythematous, papulovesicular, or exudative dermatitis in infancy or childhood. There is also likely to be a personal or family history of other diseases associated with the allergic state. In infants the character of dermatitis may be entirely different from that in older children and in adults. This is due to differences in reactivity of the skin at different ages. An early eruption may clear up after a few months or a year or two, to be superceded in a few years by the more typical adult type of atopic dermatitis or neurodermatitis, or it may gradually evolve into this adult form without an intervening period of freedom.

The characteristics of this condition in its pure form differ from those of the eczematous type of dermatitis. The skin is pruritic and gradually becomes darkened and thickened, with exaggerated skin markings, giving the picture known as lichenification. It is especially prone to occur about the flexures of the body, probably the popliteal and antecubital areas, and the neck.

There is some relationship between this type of dermatitis and other known allergic disturbances. Just what part allergy plays in these cases, however, is questionable. The skin usually reacts to scratch or intracutaneous tests with various food and inhalant substances, silk, wool, etc., but this is apparently only one phase of the picture. To quote from a recent article by Sulzberger and Goodman¹:

"Because of the unpredictable course of this disease, we have been unable, in general, to verify the patients' statements with regard to the role played by the incriminated factors. We have, however, occasionally found objective evidence that the ingestion of food (such as fish, eggs, or wheat) or the wearing of a garment (such as a silk scarf

or a woolen dress) has been followed by an exacerbation of a more or less quiescent atopic dermatitis. We have also noted that the appearance of a common cold was in some cases regularly followed by a flareup of the existing condition.

"However, we know of no regular successful production of the dermatoses by deliberate exposure to the presumptive causes during dermatosis-free periods. It must therefore be emphasized that, although the mass of clinical evidence suggests the role of exposure to certain allergens, the conclusive proof of the causal role of any and all of these agents is still lacking."

Several competent investigators stress the importance of emotional instability and nervous strain in the production of adult atopic dermatitis^{2,3}. I have observed several quiescent cases flare up after worry, business reverses, marriage, and such sources of emotional strain.

In atopic dermatitis the hypersensitiveness is located in the capillaries of the skin, and not in the epidermic cells as in eczema. Reactions usually occur to various scratch and intradermal tests and are of the urticarial type. Patch tests with contact substances are seldom positive. The sensitivity is subject to passive transfer by injection of serum of the patient into the skin of a nonsensitive person. These facts and the characteristics of the lesions serve to distinguish atopic dermatitis from the eczematous type.

It is the exception rather than the rule that one finds a definite cause, the elimination of which will promptly cause disappearance of the dermatitis. An attempt should be made to remove from diet and environment such substances as are apparently harmful. Although skin tests are of value, they must not be relied upon too much, and must be followed by test diets. These cases are prone to chronicity and recurrence, and appropriate dermatological remedies are necessary in their control. X-ray, tar, and other remedies properly used will in the majority of cases cause disappearance of the dermatitis. Large doses of calcium, auto-hemotherapy, and foreign protein injections are also aids in treatment. Avoidance of the strain of business and domestic troubles is an important adjunct to treatment.

True eczema is usually a **contact reaction**; that is, it is most often caused by external contact with substances to which the epidermis has become hypersensitive. It is not related to familial allergy or atopy, and the blood does not contain reagins. As has been stated before atopic dermatitis is associated with a

hypersensitiveness of the cutaneous vessels, and therefore responds with wheal to scratch or intracutaneous tests with various allergens. In contra-distinction to this, eczema, or contact dermatitis, being a more superficial process (epidermic), seldom reacts to intracutaneous or scratch tests, but does react after 24 to 48 hours to application of the contact irritant (patch test). The list of substances which are capable of causing contact dermatitis is practically without limit, and some suspicions must be gained from the history, location of eruption, or the patient's occupation, hobbies, or environment before one has any idea what substances to apply by patch test.

Among the common external irritants are: various plants (vegetable oils), chemicals, drugs, dyes, insecticides, cosmetics, cleaning compounds, soap, leather, paints and varnishes, fur, wool, silk, local anesthetics, and fungus products. These, however, constitute only a small part of the list of substances which have been proven to be capable of causing eczema in susceptible individuals. As a rule the best material for the patch test is the raw material under suspicion, in such a dilution that it will not be irritating to the normal nonsensitive skin. In the case of plants it is the vegetable oil which is allergenic. In diagnosis they apparently have no advantage over the raw material.

Contact dermatitis occurs on the parts of the skin exposed to the irritant. Though it most often occurs on the exposed parts of the body, this is not always the case. For example, an eczema from matches occurs in the neighborhood of the pocket in which matches are carried; eczema from lime or cement, in addition to occurring on the hands and face, is likely to involve the scrotum and ankles where the powder has sifted through the clothes to contact perspiration.

True eczema, or contact dermatitis, is predominantly vesicular in character, although early or mild cases may be only erythematous. As a result of vesiculation exudation and crusting are likely, and there may be pyogenic infection and changes due to scratching.

Contact dermatitis, or eczema, must be distinguished from other dermatoses. On the face it must be distinguished particularly from seborrheic dermatitis. Atopic dermatitis which has been overtreated, scratched, or otherwise

irritated, may appear eczematous and be difficult to differentiate from true eczema. The application of a number of patch tests with common irritants in weak concentrations will serve to differentiate the 2 conditions. Numerous positive reactions favor a diagnosis of contact dermatitis even though the specific irritant is not used.

Although the irritants usually cause trouble by external contact, they are occasionally carried through the blood stream to the hypersensitive epidermis. This is known to occur with fungus products, and certain chemical substances, and it is possible that occasionally food proteins may cause true eczema in this way. The opinion of most American dermatologists, however, is that foods are not often responsible for this type of dermatitis.

In some cases, certain metabolic disturbances, notably diabetes, or hyperglycemia, are responsible for the increased sensitiveness of the skin to external irritants.

The eczematous type of dermatophytid is due to sensitization of the skin, particularly of the hands and feet, but occasionally elsewhere, to fungus toxins, from superficial fungus infections between the toes, fingers or elsewhere. This is due to the hematogenous distribution of the allergen. These cases react to either patch or intracutaneous test, and the reaction is likely to be of an eczematous type. These cases often exhibit a sensitivity to several irritants, so that we may have a multiple etiology, a dermatitis caused by fungus hypersensitivity and continued by soap or occupational substances.

In acute exudative eczema, wet dressings of 0.5 to 1% aluminum acetate are usually rapidly beneficial. A soothing lotion or paste may be used but ointments as a rule are contraindicated. The histories of acute cases often give clues to their etiology. In chronic and resistant cases of contact dermatitis small doses of x-ray, ichthyol, and weak concentrations of tar are ordinarily beneficial. Every effort should be made in chronic cases to determine the cause. This is sometimes a long drawn-out process, and cannot be done unless the patient has the time, means, and inclination to go through with it. Often it is necessary to heal successive attacks by appropriate local and general measures before the patient can be persuaded that prolonged studies and repeated

tests are necessary. There are many cases in which, even with the patient's cooperation, it is impossible to find the cause. In eczema due to fungus sensitization it is necessary, besides treating the eczematous dermatitis, to make an attempt to eliminate the cause by thorough treatment of the fungus infection, or by desensitization, or both. These cases are difficult to handle and prone to recur. They are often not willing to remain under observation after the lesion has disappeared, and usually drift from one doctor to another at each successive attack. They are told that they have too much acid or too little acid, autointoxication, or specific food sensitization. They get better and worse without treatment, and even sometimes with treatment. They need long continued treatment and expert supervision.

Summary: The types of dermatitis associated with hypersensitiveness, atopic dermatitis and eczema or contact dermatitis, are usually different in their pure forms, and their differentiation is important. I have attempted to give briefly the characteristics and nature of each. In cases of long standing secondary changes sometimes make it difficult to distinguish the 2, but the distribution and history will usually give information of value.

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MANAGEMENT OF SINUS DISEASE

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(Read before the New Mexico Medical Society at its 54th Annual Meeting at Carlsbad, New Mexico, May 6-8, 1936).

Laymen, general physicians and rhinologists are much concerned with this important prevalent disease. Many laymen are cautious in accepting treatment and frequently speak emphatically thereover to physicians who, already dubious themselves, may not insist upon proper treatment for their patients. The rhinologist continually hears the statement from the laity, "One sinus operation, always sinus operations".

With this challenge we should consider the etiology and pathology of sinusitis and outline definite means of preventing and treating it.

There is no controversy over the cause of sinus infection. The upper air passages are invaded by the non-filterable virus causing the common cold, or by bacteria such as pneumococci, streptococci, etc. All produce similar pathology though some are more virulent than others.

After the initial invasion comes swelling of the mucous membrane of the nose. The turbinates which have the greater part of the tissue of the nose, become engorged, mechanically blocking the air passages. The mucous membrane of the sinuses are then involved, making sinusitis as well as rhinitis. If the infection is mild, the marked turgescence lasts from 3 to 5 days and subsides leaving free air passages and, more important, free drainage of the nose. This is the ideal thing to happen, and for which we all hope, in every cold. **But hangovers** are frequent. Not only must we consider the after effects, but the co-existing pathology. With an acute cold, the nose and sinuses are not the only parts involved. The infection may cause in turn rhinitis, sinusitis, laryngitis, tracheitis, bronchitis, bronchiectasis, pneumonia, otitis media, etc.

The spread of infection from the nose and sinuses—acute or chronic—may be by various routes. It may be by gravity and continuity—direct drainage from the sinus down the larynx into the bronchi—or by inhalation, the organisms in the inspired air being carried directly into the lung alveoli. There is also the possibility of lymph drainage directly from the nares and sinus directly into the lungs. Dr. Edward H. Campbell¹ reports that of 130 patients between ages of 3 weeks and 90 years of age suffering with pneumonia all had sinusitis and concludes that infected sinuses may cause pneumonia.

Dr. H. St. John Williams² states that in tuberculosis sinus disease may be responsible for much of the cough and that marked improvement may follow treatment of the sinuses. He also states that from 5 to 16% of cases diagnosed as tuberculosis are not that; hence, sinus study is important because disease of the sinuses is the most common cause of non-tuberculous chronic cough.

Sinus infection may not be an important

etiologic factor in pneumonia, but absorption from purulent sinuses may be sufficient to prostrate a patient. This debilitating complication added to a well developed case of pneumonia may be the factor to prevent recovery. As high as 90% of children with pneumonia have otitis media either unilateral or bilateral and they rarely complain of the ears to draw the clinicians' attention to them. I examined all the pneumonia cases admitted to the West Texas Hospital this past winter. All the children had sinusitis and otitis media. The middle ear and sinuses are poorly protected in children and are readily invaded by acute infections of the nose. A large per cent of the adults had sinus infection.

There has been some controversy as to whether the upper air passage may not be infected from the lower by coughing or sneezing or simply by exhaled air.

Dr. G. E. Hodge² says numerous authors have insisted that sinusitis is the primary cause of bronchiectasis while others that the bronchiectasis is primary. In an effort to check this in 10 patients with bronchiectasis at the Montreal General Hospital, he placed a small amount of 40% iodized poppy-seed oil in the trachea. The patients were asked to cough. In only 3 patients were traces of iodized poppy-seed oil found in the nasopharynx by roentgenograms. Mild silver protein was used in 10 patients. Only a few showed any stain in the nasopharynx after coughing. No iodized poppy-seed oil or mild silver proteins was found in the noses in these patients. During coughing the soft palate seems a fairly efficient barrier to the entrance of these substances into the nasopharynx. The majority of writers on this subject have expressed the opinion that the whole respiratory tract is simultaneously affected and that, although bronchitis and pneumonitis have a tendency to clear up, they are kept active by the constant overflow from infected sinuses.

Any patient recuperating from an acute respiratory infection with a persistent cough should have the paranasal sinuses thoroughly investigated. Many of these readily subside after the post-nasal discharge has been eliminated, and many tuberculous persons promptly become free of persistent cough when sinuses are carefully treated. It has been claimed by many that the mucosa of the paranasal si-

nus does not absorb readily and therefore sinusitis is not likely to be a focus of infection causing arthritis, rheumatism, etc.

Dr. R. G. Snyder¹ writes that roentgenography of the sinuses of 386 patients was done and that roentgenologic interpretation of sinusitis depends largely on a standard type of roentgenography. In 386 cases, the sinuses were clear in 124, 32%; in 262 cases, 68%, the roentgenograms revealed slight, moderate or marked changes suggestive or indicative of sinusitis. The changes were slight in 126 cases, moderate in 102 and marked in 34. The degree of arthritis bore no relationship to the degree of involvement of the sinuses. Of the total group, 126 were referred to rhinologists for clinical examinations. In 33 with positive roentgenologic signs was the rhinologist able to demonstrate sinusitis.

In diagnosing sinusitis the general man does not always have the diagnostic helps that the rhinologist possesses but he need not be disturbed about this. There are many pathognomonic signs that can be detected by limited helps. The greatest aid in diagnosis of sinusitis is to have it constantly in mind when confronted with respiratory disease. We too often are prone to dismiss the possibility of sinusitis because of lack of pain. We may have a virulent infection without pain or discomfort if the affected sinus is draining freely. In fact, this is to be suspected. In acute cases a well reflected light into the nose will show purulent discharge. Post-nasal drainage will be detected if repeated examinations are made. In the chronic type the nasopharyngoscope, transilluminator, and x-ray may be needed. One may not establish the diagnosis of infected antrum without antrum puncture and irrigation. Examination of trachea and bronchi by the bronchoscope is valuable. A condition in children simulating asthma is nothing more than thick tenacious mucus in the bronchi or trachea. The child can inhale but has difficulty in exhaling. If this is cleared with a bronchoscope the attack immediately subsides.

Children's sinuses become involved readily in acute rhinitis. Once involved they are prone to become chronic on account of lack of space for sufficient drainage. Recurrent or prolonged attacks of respiratory ailments may lead to an incorrect diagnosis. Dr. H. Kennon Durham emphasizes the resemblance of lung path-

ology associated with sinus disease to pulmonary tuberculosis. He says the symptoms, signs, clinical manifestations, and sometimes x-ray findings in the chest simulate pulmonary tuberculosis. This shows the importance of careful sinus study.

Treatment of sinusitis may be preventive, conservative, and radical or complete. In preventive treatment we must consider that all preparations used for shrinking the mucosa are of doubtful value. In many cases they are definitely deleterious to the nasal cilia. The first object is ventilation. Shrinking of the mucosa accomplishes this and relieves the nose from alternating air pressures. With the mucosa shrunk the accumulated material can be removed. This can be accomplished by gentle suction with either hand bulb attached to soft rubber catheter or by the suction tip that fits into the nares. The suction should be gentle. Of the drugs that shrink 1 to 3% ephedrine in normal saline solution is probably best. Oil is of no value and probably does harm. The action of the cilia is greatly reduced by oil. Vicks drops, etc., are in this class. The low head position gets the medication to the entire nasal area. There is probably nothing the attending physician can do that will give his patient with acute respiratory infection more comfort than a complete toilet of the upper air passage. The attendant can be given definite instruction which if carried out will be of inestimable benefit.

A subacute or chronic sinus must have a different procedure. It is surprising how much cooperation one may receive from small children in washing out the antrums through the natural openings. We use this treatment routinely with gratifying results. In adults with accumulated pus we irrigate with small punctures through the antral walls. With this treatment most cases recover if treatment is continued over a sufficient period.

The rhinologist must confront the condition frankly and be candid with his patient. To do less is borrowing trouble. The patient wants to know if you can cure sinus disease. The ideal cure demands the restoration of the parts to their normal functions and histologic appearance. Obviously this cannot be accomplished in long standing chronic disease. One may have to do radical operations, which I prefer to call "complete operations." I tell the

sufferer he can expect to be relieved of pathologic conditions causing his trouble and I am prepared to minimize the disturbance of the physiologic functions, and preserve the normal appearance of the nose and the patient. If these conditions are complied with **clinical cure** is expected.

Another and most important factor to carefully consider in outlining the plan of procedure in treatment of any sinus condition, but more especially the subacute and chronic is the question of allergy. We find a great percentage of our sinus cases are sensitive to the pollens or foods or to both. Operative procedures undertaken in the presence of allergic conditions is inviting disaster. It would be most interesting to know what percentage of sinus cases who require repeated operations are allergic. A careful history in regard to seasonal hay fever will help but in all suspicious cases of allergy the prospective patient should be thoroughly tested for all possible sensitizations. I find this precaution has greatly reduced the unfavorable results following sinus surgery.

Summary

Sinusitis is prevalent in all acute respiratory infections. It should be thoroughly investigated when considering focal infections.

A great deal can be accomplished in a preventive way by carrying out simple measures to relieve blocking and promote drainage.

Treatment should be conservative and medicinal in acute and subacute cases. In chronic types one should do the thing necessary in a radical or "complete procedure" that promises a therapeutic cure.

Allergy should be suspected in all sinus infections.

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Inter-Relationship of Sinus Infection to General Disease

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(Presented to the 45th annual session of the Arizona State Medical Association, April 23-25, 1936).

The tonsils, teeth, gall bladder, appendix, and even the mastoid antrum as etiological factors

in many local as well as general diseases, have long been recognized, but strangely enough the relationship of the nasal sinuses to the production of similar complications has attracted little attention.

The fault lies in two directions. First and most flagrant, have been the nasal specialists. They have either failed to tie up the sinus findings with the general condition of the patient, or have said little about it. Secondly, while the internists have been foremost in investigating focal infection, they have rarely mentioned the sinuses in this connection. This is particularly true concerning certain diseases of the lower respiratory tract. Wood states "evidence of secondary infection of the lower portions of the respiratory tract from nasal sinusitis is too absolute to be denied". Hajek advised eradication of sinus disease in preference to change of climate in efforts to relieve catarrhal changes in the larynx, trachea, bronchi, and lungs.

The subject certainly deserves wide recognition, for it is true beyond question that serious, and even fatal, diseases often originate in the nasal sinuses. It is equally true, that many ailments originating in these foci, while not immediately serious or fatal, finally become so, and are meanwhile a menace to the comfort and well being of those affected.

Better results will be obtained when rhinologists familiarize themselves with the signs and symptoms of general diseases, among which may be mentioned hypo- and hyperthyroidism, allergic manifestations, pituitary disease, hypo- and hyper-acidity, etc. It should be kept in mind that all nasal symptoms do not have their etiology in the nose and throat. Better results will also be obtained when clinicians realize that sinus infection may be severe without marked objective signs, such as demonstrable polyps in the nose, and headache; when they appreciate that hypertrophy of granulation tissue extending down the lateral pharyngeal walls, and enlargement of the posterior chains of cervical nodes, usually mean sinus empyema, many of the obscure diagnoses, including chronic cough, neuralgia, and neurasthenia, will disappear.

Bacterial infections gaining entrance to the body mainly through the upper respiratory tract cause a great number of diseases. It is my opinion that as our methods of diagnosis

become more proficient, the nasal sinuses will rank first among the infective foci responsible for serious complicating diseases—the tonsils, teeth, and gall bladder not excepted.

Extension of infection from a sinus may take place in the following ways:

1st—By direct extension, i. e., rupturing into contiguous sterile tissue, thus producing meningitis, thrombosis of the cavernous sinus, retrobulbar neuritis, ocular palsy, subdural or brain abscess.

2nd—By extension along the mucous membrane, with middle ear abscess and mastoid.

3rd—By gravity into the larynx and lungs, and down the esophagus into the stomach and intestines. The location of the nose above the digestive apparatus favors the entrance by gravity of septic material from the sinuses into the pharynx, larynx, bronchial tree, and also into the stomach and intestinal tract. Gravity, therefore, is responsible for a certain portion of the respiratory and gastrointestinal complications. In all chest diseases careful investigation of the sinuses should be made.

4th—By infected material carried by the lymphatics into the cervical nodes, the pharyngeal nodes, with possible retro-pharyngeal abscess, and thence into the mediastinal and peribronchial lymph nodes.

5th—By extension through the blood stream causing septicemia and bacteremia with multiple abscesses.

6th—By toxins of sinus infections sensitizing the patient causing allergic reactions.

Many of the obscure symptoms found in infancy and childhood may be explained by infected sinuses. Parents often complain of a child's not thriving, of his constantly having colds, chronic cough, croup, conjunctivitis, blinking of eyes, unexplained temperature, and fatigue; the child may be irritable, cross, and if old enough complain of headache; he may even be nauseated and vomit. Such cases are apt to be diagnosed malaria, recurring influenza, pneumonia, brain abscess, or brain tumor. I recall two cases of convulsions in children with acute kidney infections in which the nose and throat findings were entirely negative; however, x-ray plates showed the antra to be infected, and drainage of these sinuses resulted in immediate and complete recovery.

Among the systemic sinus complications in children may be included anemia, malnutri-

tion, gastro-intestinal upsets, pyelitis, myocarditis, chorea, acute rheumatic fever, and symptoms simulating tuberculosis.

In adults the more obscure symptoms many times directly due to sinus infections are headache, vertigo, arthritis, bursitis, affections of the skeletal muscles, and atypical facial neuralgias. Fay explains neuralgia as an inflammation of the blood vessel sheaths resulting from chronic sinusitis.

Darrow believes that sinus infection plays an important part in the etiology of chronic ulcerative colitis. It has recently been demonstrated that infected material from the sinus descends into the stomach and intestines; the acid of the stomach coagulates the albumen thus protecting the included bacteria, allowing them to enter the bowel where the digestive juices of the intestines dissolve the albumin and liberate the unharmed bacteria.

There is a close relationship between congestion of the sinuses and constipation. We frequently find a bowel disturbance followed immediately by a flareup of the sinuses, and vice versa. A similar close relationship exists between the sexual glands and the sinuses; many women have a sinus infection at each menstrual period; unmarried girls with sinus congestions and infections often lose them after marriage. "Faddy" diets, such as those including the ingestion of large quantities of fruit juices and of starchy foods, frequently result in hyperplastic sinus disease. Non-specific infections of the kidneys, bladder, prostate, and seminal vesicles may often be traced to infected sinuses, with cures greatly facilitated by eradication of these foci.

Fifteen Years with Trachoma Among the Indians

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(Read before the 45th annual session of the Arizona State Medical Association, April 23-25, 1936.)

Trachoma goes back to at least the 16th century when it attracted attention in the army of Napoleon and was called Egyptian ophthalmia. Later there were extensive outbreaks in other armies and it was called military ophthalmia.

It is of infectious origin; but the exciting organism has not been definitely isolated.

The question often has arisen as to what extent diet and physical condition influence trachoma. Some authorities maintain these are important factors, while others claim they are unimportant. Dr. Thygeson, a leading authority, recently told me that after exhaustive research he believes that diet and physical condition have no influence. I see far more cases in strong healthy individuals than those below par. We like our patients, however, in as good condition as possible.

There is also the question as to whether some races are more susceptible than others. It is known in all races and probably the greater incidence in certain instances is due as much to uncleanness and unhygienic surroundings as well as added predisposing factors in the way of intense sunlight, dust, smoke, sand and heat. Our Indians are in constant contact with smoky open fires in badly ventilated tepees or huts.

It has been said that negroes are immune to trachoma. I have had no experience with them and would like very much to get information as to whether trachoma is found among them.

Trachoma occurs at all ages and usually affects both eyes, although unilateral cases are seen. The reason for the one eye remaining free I do not know. Trachoma usually begins insidiously and may exist a considerable time before subjective symptoms arise, although many cases apparently have acute beginnings. In these the acute infections may be superinduced upon an old subdued trachoma. The earlier stages, however, have more marked inflammatory symptoms and discharge than do the later stages where hypertrophy and discharge are slight and scar tissue has developed. In between are many phases with intermissions and exacerbations.

We rarely call a case of trachoma **cured**, but prefer the term **arrested** because we have seen too many apparently cured cases flare up. Scar tissue does not always mean trachoma, and some cases get well without scar. The scar might be due to a grattage or other operative procedure or caustics on a mistaken diagnosis, as for instance a folliculosis. The scar is found in practically all advanced or arrested cases and helps greatly in case of doubt.

We have 2 general classifications of trachoma. The **papillary** form with small, numerous papillae upon a thickened conjunctiva gives a velvety appearance. The papillae may be large, giving a raspberry like appearance to the tarsal conjunctiva of the upper lid upon which it is chiefly found. In the **follicular or granular form**, the granules, grayish and translucent found particularly in the fornix, are usually large and less numerous than many in which few papules or follicles are found with a smooth thickened, translucent yellowish conjunctiva. This is a late stage of the more acute types and constitute what we term "burnt out" trachoma.

We classify by code numbers. The papillary type is No. 1, follicular No. 2, the combined No. 1 and 2 and scarring is No. 3. No. 3 used alone indicates the case is arrested. No. 4 is suspicious and No. 5 is folliculosis.

It may be difficult to distinguish between folliculosis and trachoma. Folliculosis usually presents small rounded translucent elevations arranged in rows only on the lower lid. If the tarsal surface of the upper lid is affected,¹ we are inclined to call it trachoma.

We believe a positive diagnosis in doubtful cases can be made by a hand slit lamp. If the upper corneal limbus (the division between the sclera and the cornea) has slight extensions of the blood vessels into the cornea, we call it trachoma; this type of pannus is pathognomonic. If the pannus is macroscopic so much the better. Blood-vessel change occurs as soon as 2 weeks after trachoma infection. In late arrested cases the blood vessels may not be demonstrated with slit lamp due to the fact that the vessels do not have blood in them. They can be found, however, with the large microscopic slit lamp since the vessels always remain patulous; even with the small hand lamp they can be seen if an irritant such as dionin is used since blood will then again appear in the vessels.

The therapy of trachoma presents many problems dependent on the type. The principal medicinal agents are the caustics such as silver nitrate and copper sulphate solution, ointment or pure. As a rule the more acute cases with profuse discharge do best under silver nitrate from a 2% solution to the pure stick applied to the everted conjunctiva. The proper use of silver nitrate requires much experi-

ence, although a 2% solution on a cotton tipped applicator applied to the everted lid with no pressure or friction, and thoroughly irrigated off with a saline or boric solution, 2 or 3 times a week is a fairly safe procedure for any physician. Silver nitrate may be used over prolonged periods without producing argyrosis if the irrigation is thorough each time the silver is used. In the days between a .05% solution of zinc sulphate or other mild solution as the physician may prefer may be used. As to how silver is to be used largely depends on the reaction. Some cases will not tolerate silver, and it must be kept off the cornea in all cases.

In the older cases without much inflammation, copper sulphate is perhaps better than silver. In many cases we use the pure stick applied to the lids with no friction or pressure, 2 or 3 times a week. We substitute the daily instillation of a 4% solution of copper sulphate or use 5 to 10% copper citrate ointment. Certain cases, however, do not tolerate copper. Where the copper stick is used the eye must be thoroughly irrigated afterward to remove the excess copper. Other therapeutic agents are yellow oxide of mercury, 2% glycerol of tannin, 5 to 25% alum stick, etc. Adrenalin is a valuable adjunct in many cases. There are many other medicinal agents.

Last year we used chalmogra oil with friction for about 1 minute on each everted lid 3 times a week or even daily, but discarded it as having no specific action. The massage of the lid may have been slightly beneficial.

For the past 8 months we have used 10% quinine bisulphate with a well saturated cotton tipped applicator with gentle firm friction for about 1 minute until a slight bluish cast of the conjunctiva appears. No irrigation is used and no harm results if the solution covers the cornea since the solution has no effect on the corneal structures. The application is made at first 3 times a week, later twice a week and still later as the case improves, once a week. The application is painful and an anesthetic is usually necessary. Pantocain is preferred, although butyn or even cocaine may be used. Later as the eye becomes more tolerant the anesthetic may be dispensed with. We use also a 2% and later, as the patient doesn't complain of much burning, a 4% ointment of bisulphate of quinine, every night and morning. In the

main patients complain less of pain and burning with the quinine treatment than they do with the silver or copper treatments. The quinine bisulphate has a pronounced effect in clearing up pannus which often complicates trachoma; pannus, by the way is not due alone to friction of a roughened lid on the cornea, but is in part due to the trachoma process itself so it must be due to the specific effect of the quinine on the trachoma that we get an effect in these cases. The quinine treatment seems superior to any other.

The surgical treatment in trachoma includes the various types of grattage, expression of the follicles by roller forceps or by other types of instruments down to the more extreme measures of excision of the tarsus and a strip of the fornix. These may be used in conjunction with medicinal agents.

In the earlier types of grattages we formerly everted the lid, chopped up the conjunctiva with the 3-bladed Darrier knife and forcep and then literally scrubbed off the entire conjunctiva with a toothbrush the bristles of which had been cut short to make them stiff and hard, and dipped in a 1-1000 solution of bichloride. Novocain had been injected into the lids, or with a child, a general anesthetic was given. This was followed by severe reactions so that topical applications were necessary for a number of days to bring the lid down to anywhere its normal size. The theory was that trachoma got well by the production of scar tissue. This method we have discarded although I believe it is still used.

We have almost entirely discarded roller and expression forceps because the gentler operative measures are best even though their repetition may be required. Hence in most of the grattages we merely avert the lid upon a retractor and rub with gauze sufficiently to break up the granules or papules, irrigate with boric solution and before the patient leaves the table instil a small amount of holocain and epinephrin ointment. This last measure gives a great deal of comfort. The reaction is so little that an hour later the patient looks like he had had nothing done to his eyes. The grattage is preceded by anesthesia with a 10% solution of cocaine instilled 3 times—about every 2 minutes. If more profound anesthesia is desired the pure flakes of cocaine are instilled afterward. Some cases require deeper grat-

tage than can be secured with gauze; in these we use a small curette. It is usually necessary to use the curette on the more pronounced areas—not bearing down too hard on the curette or gauze. We follow for about 3 days with boric and saline irrigations and instillation of 25% argyrol until the slight acute reactions clear up before starting the regular trachoma follow up treatments.

We treat both suspicious and folliculosis trachoma. Thus no possible trachoma case goes without proper treatment.

In certain old cases of trachoma where the lid is much thickened, scarred and covered with fibrous excrescences tarsectomy is indicated. The classical text-book operation consists in removal of the tarsal plate and bringing the retrotarsal fold of the conjunctiva over the denuded area and stitching it to the ciliary margin of the lid and then to prevent a possible entropion a row of cautery punctures are made in the outside of the lid directly above the cilia. We vary this operation by removing the tarsal plate only. The sutures and the cautery are not used. We believe that the retrotarsal fold in old trachoma cases is already too short and if we attach it to the lid, we invite an entropion. The denuded area will heal over very nicely although excessive granulations may require removal by rubbing with gauze a time or two before healing is complete. A canthotomy is always done in these cases at the time the plate is removed.

The most frequent complications of trachoma are pannus and corneal ulceration and occasionally iritis. Trichiasis or entropion due to cicatricial contraction of the conjunctiva may occur, as symblepharon, in certain old cases.

Acute pannus usually gets well with the trachoma; however it sometimes becomes necessary to treat the pannus. Dionin, either in a 20% solution or the pure powder instilled in the eye is usually useful. Atropine in conjunction is valuable especially if an iritis is suspected. If pannus persists we sometimes do a peridectomy, excising a strip of conjunctiva surrounding the cornea with a view of cutting off the blood-vessels which extend over the cornea. A cautery may be used to destroy the vessels at the edge of the cornea in place of a peridectomy.

Entropion, ectropion and symblepharon can usually be corrected by operative measures.

Corneal opacities from scars, corneal ulcers or organized permanent pannus are usually more or less permanent, since treatment usually accomplishes very little.

Discussion

DR. H. T. BAILEY: I would like to ask Dr. Eiler if the physicians in the Indian Service use jequirity or any other preparation to cause acute congestion or inflammation in the eye.

A few years ago when Dr. Mullins was in the United States Health Service, he told us to get all the granules out when we operated. He said that if a granule was left in the lids it was much like leaving a potato in the hill; the trachoma would return. In 1929, Dr. McHenry of Oklahoma City read a paper before the meeting of the American Medical Association. He said, "Always roll the caruncle to prevent a return of the trouble." Get all the potatoes out of the hill, if you please. Since that time I have made a habit of rolling the caruncles and to my knowledge have not had a relapse.

THE ARIZONA MEDICAL INDUSTRIAL COMMITTEE

DR. D. F. HARBRIDGE
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Three years ago the Arizona State Medical Association named a new and important committee known as the Industrial Relations Committee. As named then, and as it continues now, this body consists of 5 members with the president of the association always a member and chairman, while the secretary of the association serves as an exofficio member. The committee serves for 1 year when it becomes the privilege of the incoming president to name a new group. A secretary for the committee is selected annually which brings the actual membership to 7 members. The first committee selected consisted of Dr. Meade Clyne, Tucson, president and chairman, Dr. R. D. Kennedy, Globe, Dr. A. C. Carlson, Jerome, Dr. E. Payne Palmer, Phoenix, and Dr. Robt. Ferguson, Bisbee. The second committee consisted of Dr. C. R. K. Swetnam, president and chairman, Dr. R. D. Kennedy, Globe,

Dr. A. C. Carlson, Jerome, Dr. Meade Clyne, Tucson, and Dr. E. Payne Palmer, Phoenix. The current committee has as its members, Dr. J. D. Hamer, president and chairman, Dr. A. C. Carlson, Jerome, Dr. R. D. Kennedy, Globe, Dr. Meade Clyne, Tucson, and Dr. E. C. Houle, Nogales. Dr. Warner W. Watkins of Phoenix has served as secretary to the committee since its inception, while Dr. D. F. Harbridge is the exofficio member as secretary of the state association.

Regular meetings of this body are held on the first Sunday of each month at Phoenix. At this meeting the doctor's position in relation to industrial cases is thoroughly gone into with complaints any physician may have regarding the handling of his case or cases by the industrial commission of the state considered and final recommendations as to the disposition of the matter made to the persons concerned.

Recognizing the worth of this committee as a mediatory body, the industrial commission saw fit to name it as a rating board to meet with the medical referee and officials of the commission on the first Monday of each month to act upon current cases before the industrial board. As a rating board, the exofficio member of the committee is dropped. Three agencies are served by this representative medical body: the industrial commission which is concerned with fair and equitable compensation to the workers coming under its provisions, the patient, or worker, who is desirous of receiving the highest compensation permissible for his disabilities, and the physicians of the state who serve as "go-betweens" with the commission and the patients. Quite often each of the 3 agencies concerned may have a grievance which is presented the committee for consideration. Errors of judgment as relate, to bills rendered, to diagnosis, or to a fair compensation to the patient are debated and disposed of in a way that avoids serious unpleasantness to any of the parties concerned. With this committee sitting as a body of 5 selected surgeons and physicians of the state, it is possible to secure a single opinion regarding any probable error of diagnosis in a given case. This has proved the most economic and efficient method of disposing of the cases in point and the most satisfactory to all concerned. As a rating board, this committee is paid a per

diem fee by the industrial commission of the state for their work on the first Monday of each month. Dr. Ralph F. Palmer has served as medical referee for the industrial commission since the inception of the present plan.

The Supreme Court, in handing down a recent opinion on an industrial compensation case, explained the value of such an impartial rating board as this medical committee by stating in part that, "It seems to us beyond any reasonable probability that a board composed, as we know from the frequent reports which we have examined, of men of the very highest standing in their chosen profession, would render a report based on anything but their honest opinion and their best skill." It has always been the aim of the medical industrial relations committee of the association to base their investigations with "their honest opinion and their best skill" as the determining factor in all decisions reached.

The compensation program of the Arizona Industrial Commission is recognized throughout the nation as one of the most ideal plans in operation in this country, and more free from machination and entanglements than that of other states. It is gratifying to the Arizona State Medical Association to know that it has had a small part in building up this model program through the ministrations of its Industrial Relations Committee.

REPORT OF THE ACTIVITIES OF THE SOCIAL SECURITY COMMITTEE

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The house of delegates last April passed a resolution which defined clearly our stand pertaining to relations with the social security act. This resolution created a new committee known as the Social Security Committee, whose function is to act for the state society in all matters of social security administration. This committee is composed of the president, immediate past-president, and the president-elect.

A National Advisory Committee for the Crippled Children's program has representatives of the United States Public Health Serv-

ice, the Children's Bureau of the Department of Labor, orthopedic surgeons of national repute and members of the council of the American Medical Association. They have suggested certain rules and regulations to guide the states in the development of their part of the program under the social security legislation. The administration of the act is under the immediate direction of the Crippled Children's Division of the Children's Bureau of the Department of Labor. It is headed by a physician and receives general supervision from the assistant chief of the children's bureau—also a physician. The work of this division is being developed in close cooperation with the maternal and child-health division and child welfare divisions. In this state, the maternal and child-health programs are being developed under the supervision of the State Department of Health, while all the other portions of the act now operating are under the control of the State Board of Public Welfare.

The United States has been divided into regions, each with a physician director. Regional offices have the services of public-health nurses and social-service consultants for educational, investigative, and consultative work on maternal, child-health and crippled children problems. Orthopedic surgeons, technical advisors and officials of the U. S. Public Health Service, are used as required. The Advisory Committee holds that in states where official agencies were already developed, the act should be administered by them. The regional staffs will aid the states in setting up their programs.

Stringent regulations have been adopted for the selections of the personnel to carry out the purposes of the act. The physicians of the national advisory committee thought it advisable for the American Boards of Certification to make available qualifications of physicians and surgeons who may serve the various states in connection with crippled children's program under the Social Security Act. The American Board on Certification of Orthopedic Specialists requested that only those qualified by special examination before this board be acceptable to do the operative work. Another committee (Council on Hospitals and Education—A. M. A.) assisted in the laying down of minimum standards for hospitals desiring to house crippled children.

The national committee holds that physicians performing services under this act should receive remuneration and that policies governing remuneration should be worked out jointly by the state agency administering the program and the state or local medical societies. The agreements, however, are subject to approval by the children's bureau, as are other activities in connection with the programs.

The operative work is only part of the plan for the rehabilitation of crippled children. Provisions in the act as now adopted call for the cooperation of the medical, nursing and welfare groups, as well as other organizations charged by state laws to help provide vocational, educational, and social rehabilitation of the physically handicapped.

The maternal, child-health and child-welfare programs are under the supervision of the State Department of Health. Our committee has not been contacted directly by the State Health Department in the matter of assisting in development of their part of the program, and I am not fully versed in the operation of their programs, except to state that it is the intention to work out these programs with as little interference with the private practice of medicine as possible. As an example of this, cases found to be infected with tuberculosis during examinations by the mobile health-unit recently placed in operation in the state, are being sent to the family physicians for care, provided the financial conditions of the children's families warrant it. I understand also that it is the intention to return all cases to family physicians wherever possible, in all branches of activities that are under control of the department of health.

A Crippled Children's Division has been created in the Social Service Department of the State Board of Public Welfare with a trained nurse supervisor who has had considerable experience in orthopedic nursing, in charge.

A sub-committee known as the orthopedic composed of Drs. Greer, Carlson, Kennedy, and Clyne has been appointed by the Social Security Committee of our State Society. The duty of this committee is to arrange clinics, examine applicants for service under this program, help in the selection of cases, make recommendations as to hospitals suitable for cripp-

pled children's care, as well as surgeons qualified to do this sort of surgery, and to develop and assist in the adoption of an equitable fee schedule.

An Advisory Committee to the Crippled Children's Division has also been appointed, consisting of two orthopedic surgeons and one pediatrician. This committee's chief function is to review the findings on children examined in the clinics, and make specific recommendations as to the probable length of time required to rehabilitate the child, the approximate cost, and the selection of cases as to priority of care based upon the urgency of the case. This is done in order to provide care first to the most urgent cases, and to select an approximate number of cases each month to absorb, but not to exceed, the budget set up for the work.

It was found that no examinations under the National Orthopedic Board are scheduled until December, 1937, to examine and certify orthopedic surgeons; but we were able to effect a temporary agreement with the Regional Director for men to work on this program who are endorsed by our own society.

A State Advisory Council has been appointed by the secretary of the Board of Welfare. This committee consists of representatives of the State Departments of Health, Public Instruction, and Vocational Rehabilitation, the State Medical Society, State Nurses Association, Arizona Society for Crippled Children, Shriners, K. C., Rotary and Kiwanis, Elks, American Legion and Arizona Anti-Tuberculosis. (This council has already met.)

The program is being adapted to the children in homes of families who can pay nothing or nearly nothing for hospitalization and treatment; the status of the family is to be investigated by the Social Service Department of the Welfare Board. Those who can afford part payments, but cannot, even over a period of months, pay the full cost, will be given treatment, the welfare board paying the cost that the family cannot assume. Those whose families can meet the full payments of hospitalization and treatment, even though such payments may have to be spread over a period of months or years, are not eligible for care under this program. These children, however, are eligible for examination and advisory service.

In the state, the responsibilities of the crippled children's program are:

1. Locating crippled children and providing for diagnosis and determination of treatment required in each case.

2. Providing for hospitalization, medical, surgical, corrective and after care, supervision of and arrangements for follow-up work in the home by public health nurses, social workers, and physio-therapists.

3. Establishing a program, eventually, for the prevention of crippling among children.

The members of your committee, and especially the orthopedic surgeons feel a keen responsibility in this program; criticism will be leveled at all of us if our part of the program falls down, especially if poor quality of surgical work is done. Already clinics have been held in Bisbee, Tucson, Globe, Phoenix, Prescott, and Winslow, and over 400 children have been examined; the records are on file. Some operative work is being done especially in the hospitals of Phoenix and Tucson. Only those hospitals meeting the recommendations set up by the Councils on Medical Education and Hospitals of the A. M. A. are to be utilized for this work. That is as it should be, since all hospitals are not equipped to handle orthopedic work.

The program in this State calls for an expenditure of about \$52,000 a year. A fee schedule much like the one in the state of Washington for the operative work is under consideration. A full fee schedule will be agreed upon probably in the near future.

Etiology and Treatment of Food Allergy

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PAUL A. OELGOETZ, B. A.

J. WITTEKIND, R. N.

Columbus, Ohio.

Many chronic invalids complain of a host of **gastro-intestinal symptoms**. Upon examination, they disclose no abnormal physical signs. In the past these cases were labeled "functional," "neurosis," "hyperacidity," "urticaria" or some 50 other so-called gastro-intestinal "diseases" all mere symptoms which from the standpoint of accurate diagnosis and intelli-

gent treatment meant nothing. Some of these are true neuroses but the greater number are sufferers from food allergy secondary to pancreatic hypofunction.

Because a gastro-intestinal patient's reactions to foods are so confused by misinformation, biases, fads, prejudices, food likes and dislikes, and, in many cases, true food allergy, the history is more often misleading than informative. The trouble has been that until recently, we did not have a reliable test where-by we could differentiate the two conditions.

In previous papers^{1 2 3 4} we described a new test and stated the evidence upon which is based our conception of food allergy. Walzer⁵ has shown that whole proteins are regularly absorbed into the bowel where they can be biologically identified. We have shown that that part of the **external pancreatic secretion** produced when food is in the stomach and intestine (Boldyreff) combines with the food and serves a local digestive function, while that secreted when no food is in the stomach is absorbed into the blood stream to act as true buffers, splitting whole serum proteins which are toxic and cannot be used as food, to non-toxic split-products which can be used. When the serum enzymes are in normal concentration (0.2 by the test which we have suggested) whole proteins cannot reach the cells in an unsplit state. Inasmuch as whole proteins are regular constituents of normal blood, it is the serum enzymes which prevent all of us from being food allergic all of the time.

In short, **food allergy results from too much food**, not too much for nutritional requirements, but more food than can be hydrolyzed by the available pancreatic enzymes. Food allergy then is not a disease entity or a specific sensitization, but variations of a normal physiologic process. Because the pancreatic enzymes are heterolytic, having trypsin for splitting all proteins, lipase for all fats, and amylase for all carbohydrates, no food should reach the individual cells without first being hydrolyzed to non-toxic split-products.

We have found, after studying many hundreds of cases, that **pancreatic hypofunction** may be secondary to a primary disease, syphilis or gall bladder disease for example, but that more often no primary disease can be demonstrated. What then, in most cases, is the cause of the pancreatic dysfunction?

All doctors recognize the overpowered, harassed, **nervous**, busy-busy type of **individual** whose chief complaint is distress after eating. The antics of the common black ant as it darts here, there, everywhere, changing direction 60 times in as many seconds, is an excellent extreme example of this type of nervous system. Physiologically, this nervous system is designated as the "low threshold" type. A low threshold nervous system is one easily stimulated to maximum activity by minor stimuli.

For example: two men are sleeping; a thunder storm comes up. The first man is awakened at the first thunderclap, while the second sleeps soundly throughout the storm. Physiologically, the first man has a low threshold nervous system easily set off by minor stimuli, while the second man is the high threshold type not greatly excited even by maximal stimuli.

It should be emphasized that both types are physiologically normal. The low threshold type is not "sick" or abnormal; both types are necessary to carry on the varied businesses of our world. The high threshold type is the slow, careful, methodical thinker, the general who plans the campaign, while the low threshold type is the doer, the fellow on the firing line who translates plans into action. The low threshold types produce popular heroes.

It is an axiom of physiology that long-continued over-stimulation of nerve tissue results in fatigue, after which the nerve fails to respond to given stimuli. Because he is so easily stimulated, the low threshold type of individual sooner or later turns up with functional glandular derangements, at first, overstimulation, as in thyroid overactivity, and later, fatigue, as in pancreatic hypofunction and achylia. To prevent over-stimulation of the nervous system and resultant fatigue football players are commonly isolated before important games.

Haidenhain, Pavlov and later Boldyreff demonstrated that the external secretion of the pancreas is controlled by the **vagus**. Pfluger long ago pointed out that destruction of the nerves which supply the pancreas has the same effect as complete pancreatectomy. The tensions, stresses and strains of modern life with resultant nervous fatigue produce in the low threshold type of individual first over-

stimulation of the vagus (vagatonia) with over-secretion of the pancreas, and later, fatigue with hypofunction. Extreme fatigue often results in complete pancreatic achylia. Oversecretion of the pancreas produces mild hypoglycemia, while undersecretion permits serum proteins to reach the individual cells in an unsplit state not usable as food but producing the toxic effects which we know as allergy.

Speaking before the last meeting of the American Gastro-enterological Association, Alvarez stated:

"When at home on my usual routine, I rarely experience difficulty with my food, but when I am away from home, under unusual stress and strain from attending meetings and making talks—like this, I invariably suffer from symptoms which resemble duodenal ulcer. I become sensitive to foods, especially chicken.

"I have come to believe that my trouble is allergic in nature because no one has ever been able to demonstrate an ulcer and the trouble always clears up as soon as I return home. I have long thought that my sensitization might in some way be linked up with a temporary disturbance of the pancreas, induced by unusual nervous tension on a susceptible nervous system."

Treatment: Physiologic rest in the form of a vacation away from the contacts which produced the original vagus fatigue is, of course, indicated. A final decision in pending divorces has terminated a number of our own cases. Rest, together with underfeeding to meet the lessened pancreatic secretion will quickly remedy many cases. If the reduced intake of food is sufficient for nutritional requirements, no other treatment is necessary. It is the reduced caloric intake which accounts for the therapeutic successes obtained as a result of treatment by the "Food Addition Method" described by Orville Harry Brown.

However, most patients must sooner or later return to their usual occupations when the old troubles recur. A heart to heart talk in which the patient is given an insight into the type of nervous system with which he is equipped will help to adopt measures to in some degree insulate the nervous system against noxious stimuli. It helps a lot to "know thyself." Sedatives help during critical periods. However, inasmuch as the cause of the symptoms is not the nervous system per se, but the resulting pancreatic hypofunction, the most effective treatment is the administration of an extract of whole pancreas—preformed enzymes, to help out the inadequate gland. Fifteen grains of an active extract after each meal

assures a sufficient concentration of serum enzymes to split all of the food taken.

(This work was done under a grant from Fairchild Bros. and Foster of New York.)

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1025 East Whittier St.

Injection Treatment of Hernia; Suggestions Gained from Treating Myself and 100 Others

GARDNER S. CHAPIN, M. D.
Hollywood, Calif.

I present a number of suggestions which I have found most important in the injection treatment of hernia.

My own hernia returned after 14 injections, due probably to injudicious heavy lifting. I then decided to get upon myself my first experience in injecting hernias.

I chose a solution which had been well tried: tincture of oil of thuja and phenol each 25% and alcohol 50%. The dose is never over 6 minims. I use a sharp needle introduced slowly so that I identify each structure by the "feel" as it is perforated. The first injection I gave myself, introduced at the internal margin of the internal ring, seemed to successfully close the ring already made smaller by the previous injections. The other 14 injections made the wall extremely solid. I had the navel pain—indicating intraperitoneal instillation of the solution.

One who wishes to embark in the hernia-injecting specialty, even though he has no hernia, should inject his own abdominal wall to get the real "feel" of the needle's passing through the various structures. The experience will be "all to the good" when he comes to treating others. Then too, before injecting others he should do several herniotomies in order to become familiar with the abdominal

structures involved in hernia. Collaborating with a confrere experienced in injecting hernia is the next step before he should regard himself competent to treat hernia by injections.

I have treated over 100 hernias with perfect results, and no disagreeable experiences. I have seen several unfortunate results, however, at the hands of others.

A snug, well-fitting, comfortable truss that the patient has worn night and day for at least 10 days before starting the injections is essential. The pad must leave its impression on the abdominal wall. It must not be loosened except when the patient is horizontal and preferably only by the physician in preparation for an injection. A rubber soap dish under the pad of the truss may be of great help in retaining the hernia.

When locating the weak spots the hernia must be retained by pressure with the fingers. It is the impulse which is important and not the amount of intestine which protrudes. One might not be able to get the intestines back into the abdomen without an operation. The testicles should be examined carefully—atrophied testicles with hernia are not uncommon—to prevent one's being sued for causing a pre-existent atrophy.

A hernia which is not entirely reduced must not be injected. Even a small pad of fat in the canal will cause failure.

The plunge of the needle through the fascia must be felt; then it is introduced .25 of an inch farther. The plunger of the syringe attached to the needle must be withdrawn enough to make certain the needle point is not in a blood vessel or within the abdomen. Air from the needle indicates its point is in the peritoneal cavity. If either air or blood is obtained withdraw the needle, press on the site, and in a few minutes introduce again.

If a patient complains of a cramp like pain at the navel, the injection must be stopped at once. The solution is entering within the peritoneum. Withdraw the needle wait a few minutes and introduce again.

Never inject any of the sclerosing fluid until the needle has positively perforated the fascia. Otherwise fat necrosis and perhaps a slough will result. In any even the lesion produced will be slow to heal.

Differentiate between femoral and inguinal

hernias. In obese females a small femoral hernia may appear to be above Poupart's ligament, where as an inguinal may appear below.

In femoral hernia, 1% tannic acid in 80% alcohol is used as stronger sclerosing agents may thrombose the femoral vein.

Patients must not take enemas or colonic irrigations during the course of injections.

Patients must be instructed not to cough, sneeze, or laugh during an injection as such effort may cause an intestine to be protruded into the inguinal canal and receive a tear from the point of the needle.

Give each patient mineral oil daily during his treatment. He must not strain at stool, or for any cause.

Patients should return to the physician every 2 weeks for 16 to 18 weeks after completion of the injections for examinations. A hernia may be incompletely treated and need more injections; without frequent examinations, danger of unrecognized return of hernia with adhesions exists.

Medical colleges should now teach the injection treatment of hernia.

Phoenix Clinical Club Discussions

The case report which is the basis for the following discussions is found on page 442 in the November issue of Southwestern Medicine.

WARNER W. WATKINS:

The first paragraph of this history reads like it might have been copied out of some textbook on "Peptic Ulcer." However, if we have learned one thing in this club it is that appearances are deceptive and classical pictures can be as wrong as the Digest Poll. Sir Monnihan said that a physician should be able to diagnose duodenal ulcer over the telephone, and while we would be entirely justified in so doing in this case, it would also be a good bet to take the short end of a ten to one gamble on this diagnosis. The broad-minded clinician will not make his diagnosis until all the facts are ascertained and all possibilities have been considered.

For example, gastric hemorrhage does not necessarily mean ulceration. There are some interesting recent articles on gastric hemorrhage in cholecystitis without visible break in the gastric mucosa. Nor is the periodicity of

the pain and its prompt relief by alkalies conclusive for ulcer. The "several doctors" who evidently made snap-shot diagnoses of ulcer and prescribed alkaline powders illustrate the type of inadequate medical practice which eventually sends too many patients to irregular practitioners, and justly brings our vaunted superiority into question.

Of course we start out with a strong predilection to ulcer, keeping an open mind for additional evidence. The first fact we notice is that of syphilis, evidently active and also evidently in late stage, since it probably dates back to his hard chancre 30 years ago. The next abnormal finding was in the neurological examination with its evidence of nervous system involvement. This is confirmed by the spinal fluid findings which, with the secondary anemia, are about the only significant findings in the laboratory examinations. There was hyperacidity and occult blood in the aspirated stomach contents.

We would like to have had this case work out as one of stomach syphilis, but if this should be true, it will be in spite of x-ray findings, because this is not the familiar picture established by Eusterman & Cannon. We can, of course, have syphilis as the active cause of acute ulceration of the stomach, healing like any other ulcer with fibrotic scarring, but there is nothing characteristic in its appearance. The typical syphilitic stomach is one whose wall is infiltrated and lumen contracted to a narrow tube-like structure; this we apparently do not have in this case.

The suggestion of malignancy seems to me to rest on insufficient grounds. Extreme degrees of obstruction occur in post-pyloric ulcer; in fact, obstruction to the emptying of the stomach is more likely to result from ulcer beyond the pyloric valve than in ulcer located within or proximal to the valve. While I am inclined to agree with them in ignoring the hyperacidity as an argument against cancer, yet that finding while of minor importance is in line with the other suggestions of ulcer. I would like to pause long enough to express my opinion that pumping out and examining the stomach contents is a relic of barbarism which furnishes no fact essential to diagnosis which cannot be arrived at more quickly and comfortably by other methods. In this case, if the other findings suggested malignancy, hyper-

acidity of the stomach contents would not deter me for a moment in making the diagnosis; nor would complete absence of acid stop me from making a diagnosis of ulcer, with the findings here presented. There are too many exceptions to the old rule of hyperacidity in ulcer and low or absent acid in cancer to place reliance in it.

After having secured all our data, up to the terminal events, it would seem that four types of pathology would need to be considered.

1. Chronic post-pyloric ulcer, of long standing, finally resulting in obstruction, starvation, hemorrhage, dehydration, secondary anemia. This occurring in a patient with tertiary syphilis showing cerebro-spinal and arteriosclerotic degeneration, probably with cerebral hemorrhage as the terminal event.

2. Syphilis as the immediate cause of all the localizing lesion and symptoms. The visceral crises associated with spinal cord syphilis can simulate almost any syndrome which we can imagine. They are not, however, usually so easily relieved by alkalies. Syphilis can take the form of acute ulceration, as well as the diffuse fibrotic contraction of the stomach. Also gummas may form in the stomach in the late stages of syphilis. We do have positive proof of cerebrospinal syphilis, but we cannot connect this definitely with the stomach or duodenal lesion. Syphilis probably had more to do with the physical breakdown and death of this man than did the stomach lesion.

3. Malignant lesion obstructing the outlet of stomach. The symptoms which suggest malignancy, such as the loss of weight and the secondary anemia are just as easily explained by other causes. If this patient had cancer, then Lemke should have been elected president.

4. Some other upper abdominal lesion, producing pylorospasm and obstruction from this cause without organic lesion of the stomach.

The temptation in this case has been to digress into the treatment of syphilis, but have left that for some one more familiar with modern ideas. I would, however, comment on the suggestiveness of the statement that two years ago it was discovered this man had a positive Wassermann and he received several courses of neo-arsphenamine, mercury and bismuth. That pictures a situation which is much better expressed by Stokes than I can word it.

Speaking of the average physician trying to handle a syphilitic infection he says:

"They can have at best only the haziest conception of ideal methods for meeting the situation which confronts them. Their difficulties express themselves, first in a relative ignorance of drugs and complications; second in the tendency to monosymptomatic treatment, especially as exemplified in the ruthless attack upon the positive Wassermann reaction as such; and finally in the tendency to indiscriminate bombardment. . . . Unfamiliar with drugs and their dangers; unfamiliar with the purpose for which each is used; unfamiliar with the importance or insignificance of the symptoms presented; possessed with a laudable desire to do all that duty demands and the patient can pay for, tempered by an unfortunate disposition to stop when lesions heal or surface signs disappear, it is small wonder that the practitioner's treatment of syphilis has in the past decade been a monument to inadequacy early in the disease and to therapeutic fervor and over-energetic misapplication in the later phases."

I suspect that this man, made prematurely old by his syphilitic infection of 25 years or more, has been the victim of such an over-energetic misapplication of the toxic antisyphilitic drugs. However that may be, he now has a cerebro-spinal syphilis, and he has this whether the pathologist finds it or not. Stokes says that the one specific test which means syphilis, unless there is technical error in doing the test, is the positive Wassermann on the spinal fluid. The colloidal test here is rather inconclusive, but tends to the luetic curve.

Diagnosis: Two lesions. Cerebrospinal syphilis of vascular type. Postpyloric ulcer with obstruction from benign fibrosis.

Terminal event: either brain hemorrhage or pulmonary infarct — probably intracranial hemorrhage.

DR. JOHN PENNINGTON: This case has not only a history but some laboratory proof of an ulcer of the stomach; also has a history of syphilis and gives a 4 plus Wassermann and 4 plus spinal fluid.

The complications of the stomach are obliterative, and the death was preceded by twitchings and convulsions.

Several questions present themselves as to

the stomach. Usually when a stomach ulcer is syphilitic the response to treatment is fairly prompt when antisyphilitic measures are instituted. However, changes in the emptying of the stomach seem to be due to scar contraction rather than the presence of new growth. I feel that a new growth would more likely be gummatous than malignant. The loss of weight could be explained in that food could not be taken rather than a malignancy. It also seems that a definite stoppage rather than a pylorospasm accounts for the inability of the stomach to empty itself.

Syphilis has entered the nervous system. A positive Wassermann of the spinal fluid denotes that. The Gold curve is rather confusing, the readings being in the middle instead of at the start, yet one cannot think of tuberculosis as a basis, with no fever and nothing in history and examination to suggest such a thing.

The rather normal blood pressure reading does not prevent local blood vessel changes in the brain from giving the final picture, nor does it preclude a diagnosis of gumma of the brain in spite of vigorous treatment. I feel that a great many syphilitic changes have taken place in the brain, and even sufficient to obliterate certain blood vessels and softening of areas behind the ischaemias.

The manner of death looks much like a heart death with cyanosis of the whole body; and two attacks of this with smaller periods of slight cyanosis certainly point to the heart. However, the heart appeared normal in all respects, and he was excreting fairly well, with no special reference to a uremia.

I think the possibilities lie between uremia and brain syphilis.

The syphilis could account for all of the trouble in the stomach, and yet the usual type of ulcer could be present. It seems that it was the usual ulcer, although treatment may have been of no effect because of the scar tissue around the pylorus that evidently made it difficult to treat any ulcer. On the basis of acid readings carcinoma, while not entirely excluded, makes it very improbable. Syphilis could account for all of the convulsions by the blood vessel changes which always take place, and could account for the demise. Uremia seems a big possibility when it is considered that he

was stuporous for some time, and the clinician certainly looked into that phase.

We have two knowns that can be the same disease. We have an unknown in that the kidneys look fairly good on excretion, and yet may have retained sufficient excretory products to give a death by uremia.

Bostonians generally hold that syphilis does not kill. Were I to take their dictum I would say that the patient suffered an uremic death, even if the underlying cause was syphilis. I think I shall string not along with that diagnosis, although I feel that syphilis per se could account for the whole picture. I feel that any other blood vessel accident of the brain could independently cause the trouble, but syphilis put the vessels in that condition somewhere along the path.

1. Cerebro spinal syphilis.
2. Uremia.

Stomach:

1. Syphilitic ulcer.
2. Simple ulcer.
3. Carcinoma.

DR. F. C. JORDAN: This is a case of pyloric obstruction in a man of 58 with a wealth of clinical and laboratory data. What caused the obstruction and what caused the death of the patient?

This man had a stomach complaint for three years. He had the typical ulcer history of burning pain in the epigastrium which occurred when the stomach was empty and relieved by the taking of foods or alkalis.

It would seem that we are dealing with a pyloric obstruction due most probably to one of three causes. (1) Malignancy, (2) common type of ulcer and (3) a syphilitic ulcer.

(1) Malignancy would be the most common cause of obstruction at this age. In favor of this diagnosis is the marked loss of weight. This loss of weight, however, could be explained by his inability to retain food. There also was an anemia which is quite constant in carcinoma, but the anemia could have been caused by loss of blood through the stools and vomitus. In spite of the fact that we have no history of tarry stools or frank hemorrhage, there was occult blood in one and microscopical blood in the other of the two stomach contents examined.

The one finding which is very seldom found

in carcinoma was the constant presence of free HCl; nevertheless it may occur.

There were no evidences of metastasis and these are quite commonly present in carcinoma of the stomach. Carcinoma in the duodenum or head of the pancreas, especially the latter, causes as a rule marked jaundice.

(2) What evidence have we for or against a duodenal ulcer of the simple type or old cicatricial fibrosities.

There is certainly a typical ulcer history. Free HCl was always present. The age of the patient would point to malignancy, yet ulcers can occur at any age but are most commonly found in young adults. I do not see how we can rule out an ulcer in the duodenum.

(3) Could this be a syphilitic ulcer? We know that he had had syphilis for about 30 years. Syphilitic ulcers are so readily broken down; gumma do occur though they are not common.

Fenwick concluded that syphilitic ulcers differ from the simple type in the extreme severity of pain and vomiting. The infrequency of hemorrhage, their obstinacy to ordinary treatment and their great tendency to relapse, and perhaps above all their readiness to respond to active anti-syphilitic treatment after the usual method of treatment of gastric ulcer have been carefully tried.

The evidence against syphilitic ulcer are the rarity of this disease and the fact that anti-syphilitic treatment did not seem to have improved the condition.

Gallstones ulcerating into the duodenum may cause hematemesis and melena and also symptoms of pyloric obstruction. The absence of a history of gallbladder attacks and the absence of jaundice would be against this diagnosis.

I believe we will all agree that this patient had syphilis of the cerebral system. We have the history of syphilis three years before. The four plus Wassermann spinal fluid, the irregular pupils and many symptoms of mental deterioration, absent knee jerks, etc.

The meningo-vascular, the tabetic, and parietic are the most common types found in cerebral syphilis. In the parietic type you have the highest colloidal gold cure. The tabetic form is usually lower and the meningo-vascular form has the lowest, but the antisiphilitic treatment in any form has a definite effect on

the colloidal gold reaction. It would seem to me that the meningovascular type of syphilis was most probable with the formation of thrombi and there was probab'y marked softening of the brain.

I believe that the kidneys were essentially normal. Also the heart should not show much pathology. I would expect to find some aortic pathology and arteriosclerosis.

My diagnosis is: (1) cerebro syphilis probably of the meningovascular type with softening of the brain. As to the lesion of the duodenum I would place simple ulcer of duodenum with cicatricial fibrosites first, carcinoma of duodenum second and syphilitic ulcer with obstruction third.

PALMER DYSART: Differentiation between syphilis of the stomach and peptic ulcer is difficult. Syphilis may produce symptoms and findings similar to ulcer except that the acid is usually reduced as in carcinoma. Obstruction is the exception in syphilis but can occur with gumma and scarring at the pylorus. If this is present, the true cause can be distinguished only upon microscopic section.

Failure of dietary management to produce relief in the absence of x-ray evidence of ulcer and the presence of syphilis strongly suggests syphilis to be the cause of the stomach trouble. Failure of anti-luetic treatment to relieve obstructive symptoms would point to scarring of the pylorus following gumma providing the previous assumption is correct. That is my guess anyway. I have seen several cases of syphilis of the stomach found at autopsy, none of which was diagnosed clinically with any surety.

The cause of death is another problem. Syphilis, probably. On the absence of demonstrable cardiac disease, it is probably cerebral, gumma or endarteritis maybe. At least it is syphilis.

AUTOPSY REPORT ON CASE DISCUSSED AT CLINICAL CLUB, NOV. 14

Autopsy: The body is that of a fairly well developed, white male who has lost considerable weight.

Both lungs show a slight amount of adhesions near the apices. On section they have a

slight amount of edema. There was marked atheroma of the aorta which was dilated.

The stomach was enlarged. The pylorus had a hard mass on the anterior surface a little larger than a silver dollar and markedly ulcerated. There was no apparent extension to surrounding tissue. This area of the stomach was inflamed, especially in the center of the mass. There was no evident involvement of the pancreas. On gross examination the tissue resembled carcinoma superimposed upon an ulcer. The liver had slight passive congestion only.

The brain had moderate edema with definite thickening of the pia mater. There was marked sclerosis of the blood vessels with atheromatous plaques scattered along each vessel especially the vertebral artery and the circle of Willis.

The microscopic sections of the growth showed adeno-carcinoma.

Final Diagnosis: Large obstructing adeno-carcinoma of the pyloric end of the stomach, and arteriosclerosis of the vessels of the brain.

MODERN TREATMENT AND FORMULARY. By Edward A. Mullen, P.D., M.D., F.A.C.S.; Assistant Professor Pharmacology and Physiology, Philadelphia College of Pharmacy and Science, Lieutenant Commander, Medical Corps, U. S. Naval Reserve; F. A. Davis Co.; Philadelphia; 1936; Price \$5.00.

The book is an admirable, condensed volume on therapeutics. Nothing of value has been omitted. The major portion of the book is devoted to the essentials of treatment and many new suggestions are given. Over 2000 selected prescriptions are included, these being favorites of most of the outstanding medical men of the past and present. The subject matter is alphabetically arranged by disease conditions making it a ready reference book on treatment. It is of inestimable value to the doctor for use in his daily office and bedside practice.

VASCULAR DISORDERS OF THE LIMBS: By Sir Thomas Lewis, C.B.E., F.R.S., M.D., D.Sc., LL.D., F.R.C.P.; Physician in charge of Department of Clinical Research, University College Hospital, London; Honorary Consulting Physician to the Ministry of Pensions; Consulting Physician, City of London Hospital; Fellow of University College, London; The MacMillan Company, New York, 1936; Price \$2.00.

In a little over 100 pages, Sir Thomas Lewis presents a clinical review of the recent advances in thought and practice concerning vascular disorders of the extremities. Embolism, thrombosis and gangrene are covered thoroughly. Many practical tests and their uses in determining the state of the peripheral vessels are mentioned. The nature of Raynaud's disease and thromboangitis obliterans are clarified. Not since Krogh's "Anatomy and Physiology of Capillaries" have we had such a clear description of the functioning of the peripherhal circulation. The book is a fine addition to the English literature and is recommended to surgeons, practitioners and students.

SOUTHWESTERN MEDICINE

Printed by THE A. C. TAYLOR PRINTING CO., Phoenix, Arizona
Published monthly for the Board of Managers of the four constituent societies.

VOL. XX.

DECEMBER, 1936

No. 12

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ANNUAL MEETING OF THE SECRETARIES OF THE STATE MEDICAL ASSOCIATIONS AND EDITORS OF STATE JOURNALS.

This is a meeting primarily of, and for, the officers of the state medical associations with the editors sitting in as observers. It is an annual affair held in Chicago under the supervision and expense of the American Medical Association. The primary objective appears to be that of keeping the profession of the various states intimately in touch both with the affairs of the American Medical Association and with matters generally which concern the profession at large.

The meeting this year was held in the newly completed auditorium of the association's headquarters—the first meeting to be held in the new room. The building has been enlarged by having one or two stories added to it and has been entirely done over throughout. The exterior has a new coating of marble and stone and is now a handsome building.

The meeting was called to order by Dr. Rock Sleyster, Chairman of the Board of Trustees of the American Medical Association. He said that he had attended every meeting of the secretaries and editors and believed that these annual meetings were growing in importance. The former secretary of the Wyoming State Medical Association from Sheridan, Wyoming, Dr. Edwin Earl Whedon, was elected chairman of the conference.

The first address was given by Dr. Charles Gordon Heyd, president of the American Medical Association. Dr. Heyd impressed us as being an honor to the position he has been forced into through the death of Dr. Tate Mason. He

dealt largely with historical matters especially as to the development of the A. M. A.

The second address was by Mr. J. W. Holloway of the Bureau of Legal Medicine and Legislation of the American Medical Association on the subject of basic science laws. He commented extensively upon the excellent effects these laws have had in the various states in which they have been adopted. The influence of such laws is probably best depicted by a statement of a prominent officer of an osteopathic association when he said that the basic science laws are most difficult for osteopaths and for poorly trained practitioners because they seem thoroughly rational to the public and they demand of any one planning to practice the healing art, a thorough training in the basic sciences. Palmer of chiropractic fame has said that chiropractic is doomed, since the basic science laws compel all chiropractors to become educated. Most chiropractic schools, he has said, are already closing.

The third address was given by L. Fernald Foster, Secretary of the Michigan State Medical Society and was upon the "Michigan Filter System." This system has to do with the proper selection of cases for charity treatment.

The fourth address was by Glenn Myers of Los Angeles upon the Public Health League of California. This league was founded upon the scheme which was used by Arizona several years ago against inimical legislation for the medical profession. The scheme consists of having a league, although composed largely of doctors, with a lay name and hence with an especial appeal to the laity. It was brought out in the discussion that the principle of the Public Health League is used in other states under other names. New Jersey has a professional

league which is composed of nurses, doctors, druggists, and dentists.

The meeting adjourned promptly at 12:30 to the Medina Club, where luncheon was served. The conference reconvened promptly at 2 p. m.

The first address of the afternoon was by the president-elect of the American Medical Association, Dr. J. H. J. Upham. The theme of his address was that we should make every effort to increase the membership of the county societies where there are worthy non-members and also to increase the fellows of the American Medical Association.

The second address of the afternoon was given by Thomas Parran, Surgeon General, United States Public Health Service on the subject of "The United States Public Health Service and the Social Security Act." The outstanding statement by Dr. Parran was to the effect that he does not favor special regimentation of the American profession, but he does favor the full use of the accumulated medical knowledge to improve each and every individual of our population. He wishes the American profession to have better tools. He said that the health features of the social security act are here to stay. Health officers and physicians generally must be brought closer together with keener understanding by all of the problems of both groups. The effect of the social security act in any two communities may differ greatly one from the other because of the differing needs of the communities. The federal funds will be used to give help wherever help is needed. Dr. Parran seemed to make a most favorable impression as to his ability, his sincerity and his desire not to be radical.

The third address was by Miss Katharine F. Lenroot, Chief of the Children's Bureau, United States Department of Labor, on "The Children's Bureau and the Social Security Act." She said that the health of the nation, especially of its children, is dependent upon environment and an understanding of the needs of medical care and the type of service rendered. She, like Dr. Parran, was opposed to the regimentation of the American profession. The children's bureau proposes to do as much as possible for maternal and childhood health.

The last address of the afternoon was given by Dr. Richard M. Hewitt of Rochester, Minn. on the subject of "Practical Hints on the Preparation of Manuscripts and Illustrations." This

was a highly instructive address and when these addresses appear in the American Medical Journal every writer, especially, should read this address.

At 6:30 at the Palmer house there was a dinner conference of the editors. Dr. Holman Taylor, Secretary-Editor of the State Medical Association of Texas, presided. He had already circularized all the editors and had an outline of a program as suggested by various editors. There was much discussion upon various subjects of little interest to physicians generally with no action being taken.

The conference reconvened Tuesday morning at 9:30 a. m. The first address was by Mr. Thomas V. McDavitt of the Bureau of Legal Medicine and Legislation of the American Medical Association on "Insurance Against Alleged Malpractice." This was a highly instructive address in which a great number of important points was stressed. A few of the points are as follows: county societies should prevail upon newspapers of the county to refuse to publish information or notices of suits against physicians unless a judgement is obtained; then the society should cooperate with the newspapers to give all possible information; it is well for a medical association to keep a list of all legal firms who take mal-practice suits; a list also should be kept with all details of all suits that are recorded and the facts should be given to all doctors of the community; defense of mal-practice suits is a specialty in the legal profession and defense attorneys should be chosen because of their previous experience in this work; the insurance companies should use the same attorneys as do the medical associations; a physician should be careful to not reveal that he carries mal-practice insurance. A number of interesting points were brought out in the discussion. The New York Society has found that the prosecution invariably states that the defendant is a member of a trust and on this account his client cannot obtain expert testimony. The society then invariably asks the prosecution what experts they wish, and in turn these physicians are asked to testify. The greatest number of malpractice suits are filed by ward and charity patients. Doctors invariably fail to read their insurance contracts.

Ninety-five per cent of malpractice suits are caused by physicians' thoughtless derogatory remarks about former physicians on cases. The danger of having a malpractice suit filed against a doctor is 10 times as great as his having a fire in his home.

The second address of the second day was given by Dr. Thomas G. Hull, Director of the Bureau of Exhibits of the American Medical Association on the subject of "The Scientific Exhibit at the Annual Meetings of State Medical Associations." This proved to be a highly interesting address especially to the officers who have charge of scientific exhibits. Dr. Hull said these exhibits are becoming more and more popular and valuable.

The House of Delegates had referred for discussion: "Consultation and Correspondence with Bureau of Legal Medicine" and "Legislation and Violation of Laws Pertaining to Narcotics." In regard to legal advice it was said there had been a tendency for members to write directly to the legal bureau of the association. This may get the desired result but most often it does not. The correct procedure is for the individual member to take the matter up with the officers of the state association who in turn will take it up with the proper committee of the American Medical Association. The demands upon the committee have been so great that it has been found necessary to insist that all demands from individuals come through regular channels. The affects of disharmony in local societies is often responsible for irregular requests, therefore these accomplish nothing because the state and national associations must conform to the laws of organized medicine.

In regard to the narcotic situation, it was stated that the American Medical Association has been repeatedly placed in most embarrassing situations through having upon its rolls members who have been convicted of the Harrison narcotic act. It has been definitely stated that unless the state associations clean their rolls of all narcotic law violators that Congress will propose more stringent laws concerning the use of opiates. Such legislation will be harassing and embarrassing to the physicians generally. It was brought out that the New York Society has in its constitution and by-laws that a conviction of an individual with

further hearing impossible, automatically drops him from the roll.

It was announced at the meeting that the Bulletin of the American Medical Association which was formerly mailed to all physicians is now discontinued and in its place will be a 16-page supplement with each issue of the journal dealing with the various subjects ordinarily discussed in the bulletin. This is giving more prominence to the business side of medicine and to those phases that are not considered scientific.

ARIZONA STATE MEDICAL ASSOCIATION DEVELOPS A UNIQUE FEATURE

We understand the idea was inaugurated by Past-president Swetnam during his administration and that president Hamer, with the assistance of secretary Harbridge and other officers, put it into execution.

The officers are attending various county society meetings at their own invitation and supplying the program for the evening. The first section meeting of the State Association was held in Phoenix, November 2nd, 1936. The meeting was held in the Westward Ho Hotel and was presided over by Dr. Guy French, president of the Maricopa County Medical Society. The state officers who were present were: Dr. J. D. Hamer, president; C. R. Swackhamer, president-elect; C. R. K. Swetnam, past-president; D. F. Harbridge, secretary; W. C. Cain, vice-president, and F. W. Morris, counselor.

Dr. Hamer gave a discussion of the Social Security Act which will be found in another column of this issue.

Dr. Swackhamer took for the theme of his talk the publication issued by the American Medical Association—Hygeia. He stressed that the doctors should uniformly subscribe for this magazine as one of the pieces of their office literature. He believes that the physicians generally do not appreciate the full value of this magazine.

Dr. D. F. Harbridge spoke upon the "Industrial Relations Committee" which will be found in another column of this issue.

Mr. Leo Guynn of the Arizona Industrial Commission was present and after Dr. Harbridge's address, he made a short address in

which he commented upon the splendid success of the arrangement made by Dr. Ralph Palmer whereby the industrial commission had the services of the state medical society through an advisory committee and a rating board. He said that the relations had been unusually successful in every way.

Dr. W. C. Cain discussed the next meeting of the State Medical Association which is to be held in Yuma and urged all the men to begin at once to make preparations for attending this meeting.

We believe that every member of the local society enjoyed this meeting and believe that it is an excellent move on the part of the officers of the State Association. President Hamer deserves special mention for engineering the plan.

THE MISUSE OF THE TERM "DOCTOR"

As everyone knows there has been a great misuse and abuse of the term "doctor." One Norman D. Mattison, M. D., of New York, has long been campaigning to enlist interest in having legislation to prohibit the improper use of the word.

The degrees of Doctor, of Philosophy, of Law, of Medicine, of Divinity, etc., when conferred by institutions of standing, are titles of honor and much to be sought after; but when the degrees of Doctor of C., of O., or of N. or of some other high sounding but practically meaningless combination of letters from institutions of little or no standing are flaunted before the public, it is an insult to and a detraction from those who have earned the honorable degrees.

Dr. Mattison says that there are a great many shoes being recommended by Dr. this and Dr. that and that often the recommendations come from persons who have merely assumed the title, not even having had it conferred upon them by one of the "fly-by-night" schools which so commonly and flagrantly are ready to confer the title for a small fee of 25 to 100 dollars.

It might be well for the medical profession and other educated persons to define the standard of education which the term "Doctor" should represent and to have the state legislatures prescribe what the term should stand for.

THE PHOENIX CLINICAL (POST-GRADUATE STUDY) CLUB

In this issue will be found several discussions of a case which illustrates the method the Phoenix Clinical Club has been pursuing for a number of years for the purpose of post-graduate study. The Prescott County Society used this method for a considerable period before members of the Maricopa County Medical Society began to use it.

The most difficult type of cases are selected and it is impossible in many instances to make the correct diagnoses. The caliber of the discussion is more indicative of the caliber of the man than is the diagnosis.

The description of the case which is the basis for the discussions presented in other columns is found in the November issue of Southwestern Medicine, page 442. We recommend to every county medical society that they investigate this plan of post-graduate study.

THE ARIZONA INDUSTRIAL RELATIONS COMMITTEE

We wish to call especial attention to a report given by secretary D. F. Harbridge of the Arizona State Medical Association upon the successful activities of the above named committee during the time that it has been functioning, now practically three years. This committee assists the medical referee of the commission or functions in his place to adjust difficulties that may come between the commission and industrial surgeons of the state and to advise on questionable matters. The same committee has functioned as a rating board and so successful has it been that the Supreme Court has recognized it as an impartial and almost judicial board.

FIGHT CANCER WITH KNOWLEDGE

The title of this editorial is being used by the American Society for the Control of Cancer. The organization has now a Women's Field Army and in the spring will put on an extensive campaign of education throughout the United States in order to obtain enlistments. The information is that the President will probably issue a proclamation calling especial attention to the week and to the campaign which is to be put on.

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George Turner, M. D.

Delphin von Briesen, M. D.

PUBLIC HEALTH NOTES

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.

Director, New Mexico State Bureau of Public Health

CONFERENCES

Attending the meeting of the Texas Public Health Association was our friend Dr. T. J. McCamant of El Paso. To hear him turn the discussion of a paper on public health administration into an impassioned and successful plea that the association should meet next year in his home town was just one more lesson in diplomacy. On our way from Kilgore, Texas, to New Orleans, Dr. McCamant compared notes on the habits of the U. S. Census Bureau in its classification of the Spanish Indian racial stock. It was surprising to find that while El Paso is considered by them to be inhabited very largely by a "colored" race, the same race in Las Cruces, New Mexico, is "white." The rule seemed to be that the people of this race are colored when they are of Mexican nationality but become white almost instantaneously in the shadow of the stars and stripes. Presumably some enumerator had overlooked the fact that El Paso is in the United States. Dr. Garza Brito of the Mexican health department was also attending the conference of the American Public Health Association in New Orleans; so was Dr. Collinson of the U. S. Census Bureau. Neither of them could explain this theory of the human chameleon to our satisfaction but we now understand that in the future the Spanish-Indian will be ubiquitously white.

Dr. Clair Turner of the Massachusetts Institute of Technology had just returned from a sabbatical world tour and showed us some very beautiful colored movies which he had taken himself. Childhood has its charm alike in the places where cleanliness is next to godliness and in those where cleanliness is next to impossible.

It is rather saddening to realize what a variety of useful work is being done in some other health departments by specialists whom we cannot afford to employ in the Southwest. Alabama has a specialist in agriculture and industries who in 40 representative samples of food materials found that half contained ants, 45 per cent flies, 40 per cent miscellaneous insects, to say nothing about hairs and other "particles." One fears that there may be as many miscellaneous insects in New Mexico as in Alabama but perhaps if they cannot be segregated it is better that they should remain unknown. The Bureau of Pneumonia Control in New York State is still more enviable. Its influence on the pneumonia death rate in that state will be observed with the greatest interest.

Obviously it is impossible to review here all the important scientific contributions to this conference. The American Journal of Public Health will publish the most significant of them during the next twelve months.

Southwestern Medical Association

As a post-graduate course the program of the Southwestern Medical Association was a success. Every speaker is a teacher and each teacher presented his subjects in simple detail. Every subject chosen was timely and practical, something that every physician in the Southwest could absorb into his armamentarium of technical information to use daily to an advantage. Certainly our speakers thought it was an intensive post-graduate course, for each worked hard every day, perhaps harder

than he worked in his own medical school. Those in attendance accepted the presentations in the same serious and intensive manner. The programs started early in the mornings, consumed the lunch hours, the entire afternoons and the evenings. Of the three days the second evening alone was devoted to pleasure—the banquet. This amounted to but a breathing spell from the intensive work that started at nine o'clock each morning. Clinics and formal presentations consumed the forenoons.

Dr. Ralph A. Kinsella, Professor of Internal Medicine, St. Louis University, opened his schedule with a lecture on "Career of the Heart," showing the heart a willing and heroic organ with a plea for conservation and respect for its efforts. Just as practical were his other presentations: "Chronic Rheumatism," "Differential Diagnosis of Rheumatic Fever," "Diseases of the Ductless Glands" and "Rheumatic Diseases of the Heart."

Brilliant and practical were the presentations of Dr. Harold Brunn, Professor of Surgery, University of California. His first presentation, "Pelvic Appendicitis," was frequently spoken of as worth the price of registration. "Rectal examination for confirmation of a diagnosis of pelvic appendicitis, as described by Brunn, must become diagnostic routine to bring to surgery a definite group of appendicitis cases if further inroads are to be made into the mortality of this most important of all surgical diseases. Versatile, indeed, were his presentations: "Amputation at Knee Joint for Arterial Disease," "General Surgical Cases and Gall Bladder Surgery," and his very interesting and exhausted presentation of "Lobectomy" with motion picture film, and finally, "Methods of Diagnosis of Chest Conditions and Evaluation of Phrenicectomy, Pneumothorax and Other Modes of Treatment."

From his storehouse of knowledge and years of practical work in bone surgery, Dr. Isidore Cohn of Tulane University gave us the fullest advantage of his dynamic personality; even those of us who had not seen a fracture in 20 years had only regret when he closed each of his masterly presentations. Cohn is everything of the master that his national reputation indicates. Picking up an audience at 9:45 the first night that had not an hour of recreation since 10 a. m., not a single man left the hall and no one went to sleep until he had completed his masterly presentation of "Osteomyelitis," and after all, regardless of what branch of medicine or surgery he may be in—where is there a physician who could afford to pass up the subject "Osteomyelitis." He presented his other subjects, "Masses in the Neck," "Untreated Fractures" and his clinics just as intensively.

It is somewhat difficult for a urologist to talk to a general meeting, but Dr. N. F. Ockerblad of Kansas University met this handicap in each of his presentations—all exceedingly timely. The titles were: "The Problem of Gross Blood in the Urine," "Urinary Calculus," "Differential Diagnosis of Retro-peritoneal Lesions," and "The Problem of Pyelitis"—perhaps the most interesting of all to the general men.

Dr. Case, of Chicago, is too well known as a teacher and as a practical roentgenologist to attempt to do justice to him by ordinary favorable comment. Always conservative, always explicit, from his wealth of x-ray experience he brought to us messages as only a master can.

And lastly, Texas' own Willard Cooke, as a Floyd Gibbons of the Medical Fraternity—put more information through an amplifying mike in five minutes than the average speaker gets out in two and a half hours. He is a safe and careful teacher and the great problem confronting American obstetrics today will certainly be met if the conservative teachings of a man like Cooke are to be followed.

THE BUSINESS MEETING

Saturday afternoon the business meeting was held in the El Paso Club following a general luncheon, when the president, Dr. J. J. Gorman, turned over the gavel to president-elect, Dr. C. R. Swackhamer of Superior, Arizona. Dr. Swackhamer made a short but militant address against state medicine.

At the election of officers the "Dean of Surgery" of the Southwest, Dr. W. L. Brown, was elected honorary president, and voted a life member of this association. Dr. LeRoy S. Peters, of Albuquerque, New Mexico, is president-elect to take office in 1937. Dr. Howell Randolph was elected 1st vice president and Dr. John W. Cathcart of El Paso 2nd vice-president. Orville E. Egbert was re-elected secretary-treasurer.

Following the election, an invitation in the form of a resolution was presented from Phoenix and Arizona asking that the 1937 meeting be held in Phoenix. The association accepted the invitation and will meet in Phoenix next year.

At an executive board meeting immediately following the adjournment of the business session, Dr. Howell Randolph was named as chairman of the program committee for the next meeting.

Four hundred attended the banquet Friday night at which Dr. LeRoy Peters was toast-master. The feature of the banquet was the splendid ovation given Dr. W. L. Brown when the nominating committee read the recommendation to the association that Dr. Brown be made honorary-president and a life member of the association.

ORVILLE EGBERT, Secy.-Treas.

Mrs. James J. Gorman, wife of the past president of the Southwestern Medical Association, spoke on obesity at the meeting of the Woman's Auxiliary of the El Paso County Medical Society during November.

The committee for entertaining the wives who were present at the Southwestern Medical Association meeting consisted of Mesdames Kelter, Wolfgang, Ebell, Robert H. Greer, Franklin P. Schuster, W. E. Vandevere, James A. Pickett, S. J. Gaddy, Sigmund Haffner, Leslie Smith, Paul E. McChesney, Erie Spier, Paul Gallagher, B. F. Stevens, J. L. Stowe, William Multhauf, Samuel Renick and S. D. Armistead.

NEW MEXICO MEDICAL SOCIETY

To the Physicians of New Mexico:

When the New Mexico Medical Society held its last meeting at Carlsbad a question was raised in the House of Delegates meeting as to whether the large health districts established by the legislature of 1935 did not make it impossible for quarantine to be established with due promptness.

A committee of the Medical Society, consisting of Dr. Carl Mulky, chairman, Dr. George T. Colvard and Dr. W. H. Livingston, was appointed to confer with the director of public health and to devise if possible a plan by which promptness of quarantine could be assured.

The regulations governing the control of communicable disease, which have been in force since 1922, provide in Section 6 that:

"Whenever any case, suspected case, or carrier, of communicable disease shall occur in this State, it shall be the duty of the professional attendant, if there be such upon said case, immediately to institute the following measures for the protection of the public health:

"Establish and maintain such measures of con-

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*Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245

Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154

N. Y. State Jour. Med., June 1935, Vol. 35, No. 11

Arch. Otolaryngology, Mar. 1936, Vol. 23, No. 3, 306-309

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trol as are hereinafter specifically provided, said measures to continue in force until control of the case has been instituted by the health officer having jurisdiction, or his agent. Provided, that this section shall not apply to the posting of a placard upon the premises."

From these paragraphs it appears that the responsibility for quarantine rests already upon the professional attendant until such time as the health officer is able to assume responsibility. The second paragraph explicitly excuses the professional attendant from the responsibility of posting a placard. Your committee in conference with the director of health has concluded that the establishment of quarantine without a placard is in many cases inefficient and viewing the difficulty of immediate placarding in large health districts it has decided to recommend to practicing physicians that a simple placard which does not commit one to a diagnosis but simply states that communicable disease is present within should be posted whenever the attending physician believes that a communicable disease exists. It is understood that there is no legal obligation on any physician to post this placard and that in posting it he assumes no further responsibility for the control of the case than is implied in the second paragraph quoted from the regulations above. At the time that the physician posts this placard he will naturally notify the health department of the existence of a communicable disease or of a suspected communicable disease. If he finds that his suspicions were unfounded at a subsequent visit he will so notify the health officer who will then have the responsibility of removing the placard. If, on the other hand, he has no reason to change his first opinion, the placard will remain until the district health officer either substitutes another placard stating the specific disease or releases the house from quarantine.

A supply of placards will reach you under separate cover from the State Bureau of Public Health. A further supply will be sent at any time on application to the district health officer.

ON BEHALF OF THE COMMITTEE OF THE HOUSE OF DELEGATES OF THE STATE MEDICAL SOCIETY,

CARL MULKY, M. D., Chairman

GEORGE T. COLVARD, M. D.

W. H. LIVINGSTON, M. D.

ON BEHALF OF THE BUREAU OF PUBLIC HEALTH,
J. ROSSLYN EARP, Dr. P. H.,
Director.

TRENDS IN THE CARE OF THE INDIGENT SICK BY PUBLIC AGENCIES IN NEW MEXICO

FAY GUTHRIE

(Director New Mexico Relief and Security Authority)

Prior to FERA practically all counties cared for their indigent sick. The FERA gradually assumed all medical relief and convalescent care and increased the expenditures far above the ability of any county to maintain. Too, during the existence of FERA a new public health bill was passed by the legislature, which eliminated the county physicians and placed the health program on a district basis. Under the new Public Health Law, nothing but preventive medicine is attempted and the funds previously available for medical relief are diverted to other purposes. The private agencies formerly interested in medical relief left the field.

The law creating the New Mexico Relief and Security Authority gave the authority supervision over county indigent fund expenditures. There was a question as to the legality of this and enforced supervision was not attempted. Instead, our workers were instructed to meet with the county commissioners and work out systems whereby the

counties would use the indigent funds for medical care, hospitalization and burials and would refer all applicants for medical care to our local county offices.

In most counties this plan was agreed to. County Supervisors of Public Welfare were instructed to continue the FERA plan of reduced fee schedule; allowing the applicant to select his physician until a cooperative agreement with the state medical society was had. In counties where county funds were exhausted or insufficient, state relief funds were furnished. County supervisors were instructed to authorize medical care of emergency cases only as the funds were far from adequate.

Many of the doctors of the state were not in accord with the FERA plan of reduced fee schedules. Many would not accept patients on this basis. The doctors resented the fact that FERA would not pay hospitalization.

Some counties had no money for medical relief. Others had inadequate amounts.

Another item of major importance was that the FERA could not protect the sick from irregular practitioners. The attorney general had ruled that FERA funds became state funds as soon as they came into the state to be spent by a state organization. The laws license several types of practitioners of the healing art and the relief supervisors has no authority to say that state money shall be spent with only 1 classification.

A chief difficulty is the scarcity of doctors in remote sections of the state. Numerous individuals living 100 miles or more from populous centers need care and the cost of providing it is prohibitive.

Another difficulty was the lack of local medical societies with which plans could be discussed. In many instances discord among the medical profes-

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sion existed and united action could not be obtained. The difficulties made it impossible to establish a uniform medical relief system in the state. It was necessary to attack the problem from a county and in some instances from a community standpoint.

It was impossible to depend upon county sources of revenue as the counties that present the largest problems do not have the ability to produce the money needed. State sources of revenue had to be found.

A close relationship between the state medical society and the relief authority was decided upon and if possible a doctor would be employed by the relief authority to direct medical relief.

Medical relief plans of other states were studied and at the annual meeting of the medical society three plans of medical relief for the state were presented.

The first plan called for the employment of a county physician on a part time basis, to be paid from county indigent funds, the indigents to be accepted only when properly referred by the relief authority. Approval of this plan was requested as some counties had already employed county physicians and were being used by the relief authority. Then, too, for the particular counties involved this plan seemed to be the most feasible when the amount of available money was taken into consideration.

The second plan was a continuation of the reduced fee schedule system used by the FERA with some revisions. All other features of the plan were the same. Approval of this plan was asked, as it seemed to be the only workable plan in some counties due to local conditions affecting the medical profession.

The third plan was somewhat different to any ever tried in this state. It consists of an agreement with a local medical society to do the medical relief in a county for a stated sum. The person applies for medical relief to the relief office and is given a request for treatment. He may take this request to any member of the local medical society. The money is turned over to the medical society for distribution among its members and the hospitals where hospitalization has been recommended. Approval of this plan was requested. We are now starting the experiment in Santa Fe county on a month by month basis so that necessary changes can be made at any time, with the consent of the medical society and the relief authority.

The 3 plans were approved by the state medical society.

Pending the next session of the legislature, medical relief in New Mexico must be inadequate due to lack of funds. Legislation will be asked to establish a division of medical relief in the welfare department with a separate appropriation large

enough to enable us to administer a more adequate program.

If such a bill and appropriation is passed, the division should be headed by a physician who should make a study of each county and community, and with the consent and approval of the medical society to the particular locality. Proper hospital and convalescent home standards should be adopted and all such institutions should be licensed by the medical relief division before indigents are admitted.

ARIZONA STATE MEDICAL ASSOCIATION

Dr. George A. Bridge, long prominent in the medical profession in Bisbee, Arizona, died at his home November 18, 1936 at the age of 63 years.

He was born in Hazardville, Conn., and graduated from Yale in 1898 with high honors, receiving his Phi Beta Kappa key. Later he was graduated from the medical department of Columbia university and served as an interne in the New York City hospital. In 1903 he came to Bisbee to accept a post with the Copper Queen hospital and was made chief surgeon in 1920, a post he held until his retirement from active practice.

He was elected treasurer of the Arizona Medical Association in 1912 and later served as president.

Dr. Bridge served as past-grand-master of his Masonic lodge in Bisbee and was a past-grand-master of the Grand Lodge of Arizona.

He was especially active in church and civic affairs in his community. He is survived by his widow and one son, John, who is engaged in business in Bisbee.

Dr. Henry A. Doyle, 83 years of age, retired from active practice for fifteen years, died November 7, 1936 in his son's home. Dr. Doyle had been ill for a number of years. He was a native of Doyle, Tenn., which was named in honor of his family. He had never practiced in Arizona. He was a member of the Christian church and of Arizona lodge No. 2, Free and Accepted Masons. He had been the master of five different Masonic lodges. Surviving him are 3 sons, Joseph H. Doyle and George E. Doyle of Phoenix and William Doyle of California, and a daughter, Mrs. J. P. King of Tennessee.

Dr. D. F. Harbridge, secretary of the Arizona State Medical Association, attended the meeting of the secretaries of the state medical associations and the editors of the state journals, held in the auditorium of the American Medical Association



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THE ROBINSON CLINIC

G. WILSE ROBINSON, M. D.
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headquarters on the 16th and 17th of November. Dr. Harbridge participated in several of the discussions notably on the subjects of malpractice and the basic science law. He especially explained to the conference the experience Arizona has had with malpractice defense.

Dr. Harbridge has been attending these conferences for such a number of years that his voice is listened to with a great deal of respect by the secretaries and editors.

The Medical Auxiliary of the Maricopa County Medical Society has taken for its activities for the year, the task of placing as many subscriptions for Hygeia in as many appropriate places as possible. Mrs. Swackhamer of Superior is chairman of this committee and desires the physicians to place their subscriptions through the auxiliary.

Dr. Orville Harry Brown of Phoenix spent a few weeks in the east during November. He visited his mother near Kansas City and addressed the Jackson County Medical Society November 10th. He was in St. Louis 2 days visiting clinics and in Chicago attending the State Secretaries and Editors' meeting the 16th and 17th. From there he went to Washington to visit his daughter and drove home by the southern route. Mrs. Brown had gone to Washington ahead of him and returned with him.

Dr. Robert Phillips, city health officer for Jerome, has been making a drive to vaccinate the adult population of his community. The children have already been vaccinated.

The Thomas-Davis Clinic in Tucson announces the association with it of Dr. Robert E. Hastings, formerly instructor in surgery at the University of Michigan. Dr. Hastings' practice is limited to bone and joint diseases.

The Basic Science bill passed both Houses of the Arizona Legislature in the closing hours of the special session. The vote was 40 to 8 in the House, 18-0 in the Senate. The bill carried the emergency clause, having received sufficient votes to pass as an emergency. Therefore, it is now in effect.

Dr. Harry R. Carson, Phoenix, was recently elected to Fellowship in the American Academy of Pediatrics at Evanston, Ill.

Yuma County is erecting a new county hospital costing about \$40,000. The building will be T shaped with a width of 100 feet and depth of 140 feet. The walls will be of concrete blocks and the roof of asbestos shingles. A heating and cooling system will be installed. There will be 11 private rooms, one four-bed ward and two two-bed wards.

Newspaper accounts state that Drs. R. J. Stroud, of Tempe, H. D. Ketcherside, J. D. Hamer, D. F. Harbridge of Phoenix, J. B. Littlefield, Tucson, Charles R. K. Swetnam, Prescott, and C. R. Swackhamer of Superior have been selected at the request of J. A. Waldron, state director of the rural rehabilitation division of the Resettlement Administration to develop plans for farm medical co-operatives for Arizona's low income families. It is said that the findings and suggestions will be submitted to Mrs. Olga Welch, state supervisor of county co-operatives.

The Maricopa County Medical Society elected new officers December 7th: Dr. Robert S. Flinn president, Dr. George Thorngate secretary-treasurer, Dr. Melvin L. Kent vice-president, Dr. Jos-

eph Madison Greer censor and Dr. Leslie R. Kober member of library board. Drs. H. L. Goss of Phoenix and Floyd B. Bralliar of Wickenburg were elected to membership.

Dr. Bransford Lewis, Professor Emeritus of Urology, St. Louis University, gave an address upon the subject of "Nephropexy." Dr. Ralph Palmer gave a paper upon the "Injection Treatment of Hernia," and exhibited a film showing technique of the injection treatment.

Dr. M. E. Burgess of Oraibi, Arizona was elected president of the Indian Service Medical Society of New Mexico and Arizona at a meeting held in Albuquerque, November 14th.

Dr. J. C. Hancock of Fort Apache was elected secretary-treasurer of the Indian Service Medical Society of New Mexico and Arizona at the semi-annual meeting held in Albuquerque.

The 1937 spring meeting of the Indian Service Medical Society of New Mexico and Arizona will be held in Phoenix.

Dr. and Mrs. Carlton Towne of Tucson spent a few days during November with Mr. and Mrs. Frank Robertson of St. Louis who are residing for the winter at the Lon Megargee home on the desert near the Biltmore.

Dr. R. W. Hussong, city health officer of Phoenix, reported to the city manager that in October his office had examined 282 food handlers, 223 restaurants, cafes, and other food places, 100 farm dairies, 145 milk and cream samples, and had made 195 butterfat tests, 197 bacterial examinations and 173 milk temperature checks.

Dr. Trevor G. Browne of Phoenix was chosen chairman of the group which is sponsoring the Federal Art Center in Phoenix. The purpose of the project is to provide work for artists, stimulate interest in art in the community and to revitalize the work of artists.

Dr. and Mrs. Warner W. Watkins of Phoenix spent a few days during November with Dr. and Mrs. Roy E. Thomas of Los Angeles.

Dr. L. B. Cohenour attended the meeting of the secretaries of the state medical associations and the editors of the state journals in Chicago, November 16th and 17th. He flew from Albuquerque to Chicago and returned in the same way so that he was away from his work but two days.

Dr. J. D. Hamer addressed the Phoenix Woman's Club during November in regard to the American Red Cross, giving an outline of its work and ideals and urged all to become members. Dr. Hamer was chairman of the Maricopa County Chapter.

Dr. and Mrs. E. Payne Palmer gave a travelogue at the Catholic Woman's Club on the evening of December 10th, to which they invited their friends.

The Santa Cruz County Medical Society had its annual meeting December 5th. Dr. J. S. Gonzales was elected president, Dr. Z. B. Noon, vice-president and Dr. C. S. Smith, secretary. It was made a ladies' night with a banquet across the border at the Caverns. More than 100 physicians and friends attended the occasion. Dr. J. D. Hamer, president of the Arizona State Medical Association was the guest of honor and the principal speaker.

Dr. and Mrs. M. L. Day of 129 North Country

Club drive entertained Dr. and Mrs. Bransford Lewis December 3rd. Other guests included Dr. and Mrs. W. O. Sweek. The dinner was given at Jokake Inn.

Dr. and Mrs. A. C. Armbruster returned late in the fall from a trip along the Pacific coast.

Dr. Marcus G. Kelly, son of Mr. and Mrs. Marcus P. Kelly of Phoenix, has been appointed a staff member of the Miami Copper Company. He has been located at Lewiston, Ida., where he was connected with the Lewiston government hospital as assistant district surgeon. He was graduated with the class of 1933 from St. Louis University. He interned at the Los Angeles County Hospital.

Mr. and Mrs. C. H. McKellips announced the engagement of their daughter Josephine to Dr. Charles Borah at a dinner given at Jokake Inn, December 3.

Dr. George A. Hays, director of the health administration for the state board of health announces that a new full time health unit will be established in Santa Cruz county.

Dr. Charles B. Huestis of Hayden had to testify in a murder case in which a woman was supposed to have killed her husband.

Dr. and Mrs. Sherman of Phoenix entertained the doctor's brother and his wife—Dr. and Mrs. R. L. Sherman of Los Angeles.

Dr. J. M. Greer, with Mrs. Greer and Doctor George Thorngate left Thursday morning in their private plane for the meeting of the Southwest

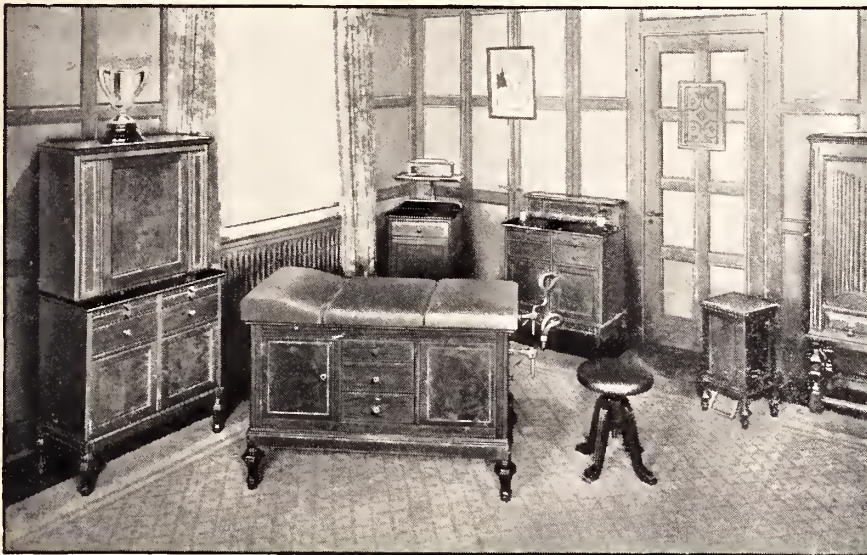
Medical Society in El Paso. They encountered strong headwinds and when in the vicinity of Lordsburg, New Mexico, it was found that they did not have enough gasoline to reach El Paso and that they would have to go back to Tucson or would have to land at Lordsburg for gasoline. In dragging the field at Lordsburg in order to determine whether or not a landing was possible in the strong wind or whether it would be necessary to go back to Tucson, a strong twisting gust of wind tipped up the right wing of the plane and before it could be righted the left wing struck the ground and the plane was badly damaged. Fortunately the occupants escaped with nothing more than a good shaking up.

Dr. B. M. Berger of Phoenix, has recently returned to the city after an absence of about two years. He suffered a physical breakdown and is still not able to practice although he is feeling and looking much better.

Dr. C. J. Salsbury, head of the Sage Memorial Hospital at Ganado, Ariz., was a visitor in Phoenix during October. He was a Republican candidate for state representative from Apache County.

Word has been received that Mrs. May Hoskins, widow of the late Dr. T. J. Hoskins of Phoenix, is recovering from a serious illness and operation at her home in Denver. Dr. Hoskins was a member of the staff of the Phoenix Veterans Bureau.

Dr. and Mrs. C. Lawrence von Pohle of Chandler are constructing a new home which will have heating and cooling systems and will be modern in every way. It will be of Spanish design—the outside walls of adobe.



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Dr. and Mrs. W. P. Sherrill of Phoenix have taken possession of their new home on North 28th Street just south of Indian School Road. The walls are of adobe, free of plaster or other surfacing on the exterior. Wood beams of the ceiling in the main rooms are white-washed. The roof is of split shake painted white.

Dr. F. C. Jordan examined the pre-school children of Scottsdale during October.

Dr. Mayo Robb did the eye, ear, nose and throat examinations of the pre-school children of Scottsdale.

Dr. and Mrs. L. A. W. Burtch vacationed in the east during the summer and early fall. Dr. Burtch attended the Congress of Anesthetists in Philadelphia October 19 to 23, where he received his certification diploma and college medallion as a specialist in anesthesia.

Dr. and Mrs. O. W. Thoeny of Phoenix were hostesses November 2nd to the Maricopa County Medical Auxiliary. After the medical meeting the doctors were invited in for refreshments and bridge.

Dr. Charles N. Ploussard had his automobile stolen and stripped of about \$125.00 worth of equipment during October.

Dr. Trevor G. Browne of Phoenix entertained Nichol Smith and his wife at a dinner at his home during October. Dr. Smith is professor of English at Oxford University. Dr. Browne also went to Tucson with the Smiths to hear the Professor address the Oxford Club at Tucson.

Dr. Dudley Fournier reports that he visited the famous Dionne quintts during his summer vacation and also, although it was strictly against the rules, he was able to get motion pictures of the girls.

Dr. Charles S. Smith, Nogales, was appointed a member of the state board of medical examiners. He succeeds Dr. John E. Bacon of Miami who resigned.

Dr. Henri S. Denninger was elected chairman of Glendale chapter of American Red Cross.

Dr. George B. Ervine of Tempe is vaccinating the pre-school children each Wednesday morning in the Matthews Library on the campus of the Arizona State Teachers' College against small pox and diphtheria.

Dr. Lyle Condell of Pima discussed vaccinations before the Pima Parent-Teachers' Association in the high school auditorium on October 25.

Dr. Roy Thomas, formerly of Phoenix now of Los Angeles, visited his mother during the latter part of October. Dr. Thomas' name has been in the Los Angeles papers of late as physician of Chic Sale.

Dr. M. Matanovich returned from a three months vacation in Europe. He attended clinics in Vienna and the Congress of Surgeons in Paris.

Dr. Fred G. Holmes has accepted the presidency of the Community Chest and is not only attacking a man-sized job, but he is doing it in a man-sized way. It looks as though the Community Chest would exceed their budget for the first time in a number of years.

Dr. Howell Randolph recently addressed the Board of Directors of the Phoenix Chamber of Commerce.

Dr. N. A. Ross has worked out a plan whereby the Maricopa County Clinic will be transferred to a building owned by the County and will not only save the County a great deal of money, but will give the county physicians a chance for better work.

Dr. E. Payne Palmer addressed the Lions Club upon his recent visit to Europe and showed several reels of motion pictures which he took while on his trip.

Dr. W. D. Gilmore, tuberculosis consultant for the state department of health in charge of the health mobile unit, is now in Yuma county examining school children for tuberculosis.

Dr. Bert Logan Jones, former Fort Whipple hospital word surgeon, Fort Bayard, New Mexico, lost his wife, Jessie Hays Jones, October 26, 1936. In addition to her husband, she is survived by a daughter, Elizabeth and a son, Robert Ellis Jones.

Dr. E. C. Houle and family of Nogales spent several days recently visiting points of interest in northern Arizona.

Dr. A. L. Guustetter of Nogales returned recently from a short vacation trip to Los Angeles. Upon his return home he was accompanied by Mrs. Gustetter who has spent some time in California.

Dr. and Mrs. J. S. Gonzales of Nogales returned

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home recently following a trip to St. Paul, Chicago and Canadian points. While absent from home Dr. Gonzales attended the International Post Graduate Course in St. Paul.

Dr. E. M. Fulk, formerly of Zanesville, Ohio, has located in Nogales.

Dr. Dake Biddle of Tucson and Dr. Charles S. Smith of Nogales will attend the Mid-Winter Clinical Course in Eye, Ear, Nose and Throat to be given the last two weeks in January in Los Angeles.

Dr. and Mrs. Hiliary Ketcherside of Phoenix attended the annual banquet of the Santa Cruz County Medical Society in Nogales, Dec. 5th. Dr. Ketcherside delivered an address.

Dr. and Mrs. Dake Biddle of Tucson attended the annual banquet of the Santa Cruz County Medical Society in Nogales, Dec. 5th.

At the annual meeting of the Santa Cruz County Medical Society on Dec. 5th, Dr. E. C. Houle, Dr. J. S. Gonzales and Dr. Charles S. Smith were elected as the board of censors. Dr. A. L. Gustetter was elected delegate to the American Medical Association.

BOOK REVIEWS

ALLERGY OF THE NOSE AND PARANASAL SINUSES: By French K. Hansel, M.D., M.S., Assistant Professor of Clinical Otolaryngology, Washington University School of Medicine; Fellow of the Association for the study of Allergy, The Association of Resident and Ex-Resident Physicians of the Mayo Clinic, The American Laryngological, Rhinological and Otolological Society, and the American Academy of Ophthalmology and Otolaryngology; The C. V. Mosby Company; St. Louis, Mo.: 1936; \$10.00.

Dr. Hansel recognizes that allergy may be important in the diagnosis and treatment of infection of the nose and paranasal sinuses and that the two conditions may exist separately or in combination. This is a treatise far more extensive than would be expected from the title of the book. He has made an exhaustive survey of the literature and seems to have a thoroughly reliable understanding of the whole subject.

This book is divided into 35 chapters and consists of 820 pages. There is a table of contents, a complete list of illustrations, and what appears to be an excellent index.

His first chapter gives the fundamental principles of paranasal sinus disease. After this is presented the physiology of the nose and paranasal sinuses and the pharmacologic action of drugs upon the mucosa, biochemistry of the secretions and tissues of the nose and paranasal sinuses, and the bacteriology of the nose and paranasal sinuses. He then discusses cellular reactions of the tissues in allergy and in immunity, histology and histopathology of the nose and paranasal sinuses in allergy and in infection, and the relation of allergy to the acute and chronic inflammatory diseases of the nose and paranasal sinuses. Chapters 8 to 15, inclusive, deal generally with anaphylaxis and allergy—origin and development, reactions to foreign serum and other allergens, fundamental clinical characteristics of allergy, biochemical and other changes in allergy, methods of testing, selection of allergens and specific diagnosis. Chapters 16-20, inclusive, deal specifically with allergy of the nose and sinuses. Chapters 21-26, inclusive, treat other manifestations than those of nasal allergy. Chap-

ters 22-27 discuss allergy and infection of the paranasal sinuses in children. Chapter 28 treats the allergic lesions of the external, middle and internal ear. Chapter 29 concerns allergy and immunity in ophthalmology. Chapter 30 is the general treatment of allergy. Chapters 31 to 34 have to do with treatment of hayfever, chemistry of pollens, preparation of extracts, etc. The last chapter, 35, deals with the clinical types of nasal allergy.

This is an excellent treatise on the subject of allergy, especially that of the nose and throat, and is recommended to all physicians who are desirous of keeping abreast of this important subject.

EPIDEMIC AMEBIC DYSENTERY: THE CHICAGO OUTBREAK OF 1933; published by the United States Treasury Department, Public Health Service, National Institute of Health Bulletin No. 166; United States Government Printing Office, Washington, D. C.; March, 1936; for sale by Superintendent of Documents, Wash. D. C.; 20 cents.

This is a paper covered booklet of 187 pages, being exactly what the title indicates.

Clinical lessons proved by the Chicago epidemic are: amebic dysentery is not solely a tropical disease as formerly held; it has wide geographical distribution; therefore it must be considered in differential diagnosis in all regions. It may simulate a variety of common clinical conditions. It should be thought of especially in cases of colitis, appendicitis, malignancy of the colon and surgical conditions of the rectum. Fever does not speak against an uncomplicated amebic dysentery. Specific therapy proved to be remarkably effective. Non-specific medical measures were usually disappointing and surgical intervention was often disastrous. The booklet is recommended to every practicing physician as carrying an unusual message.

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BOOK REVIEWS

A COMPLETE MONOGRAPH ON THE ADRENALS: by Arthur Grollman, Ph. D., M. D., Associate Professor of Pharmacology and Experimental Therapeutics, and formerly Associate Professor of Physiology, Johns Hopkins University Medical School; Williams and Wilkins; \$5.00.

In a concise volume of some 350 pages the author presents all of the well known facts about the adrenals as well as a great deal that is entirely new. He has divided the adrenal anatomically into cortical, medullary, and the androgenic tissue, the latter term being original and used to designate a zone of tissue existing as a separate entity in the embryonic life of the adrenal. The relation of the adrenals to the other endocrine organs, to metabolism, to surgical shock, to toxins, infections and immunity are some of the many important topics—indicating the lines for future development in the special science of endocrinology.

The chapters discussing the clinical aspects of the adrenal are of especial value to the practicing physician: Addison's disease is clarified and such other diseases as thyrotoxicosis, dietetics and obesity are viewed in a new light.

It is needless to say that all important considerations about the adrenal are covered thoroughly. The work analyses the accumulated literature and with original research work brings up to date our knowledge of this important gland. The book is indeed a valuable addition to the field of endocrinology.

PHYSICIAN, PASTOR AND PATIENT: by George W. Jacoby, M. D., Past-President of the American Neurological Association; Paul B. Hoeber, Inc., New York, Price \$3.50.

Dr. Jacoby has had a wealth of experience and training. He discusses a variety of subjects including Superstition, Health in Relation to Judaism, Christianity and Mohammedanism, The Inexplicables in Medical Practice, The Physician's Calling, Religion and Patient, Modern Religion in Daily Life, Future Medical and Religious Cooperation, Vital Problems confronting Physicians and Clergymen, and also such problems as contraception, birth control, sterilization, sex education, mental unfortunates, vivisection and professional secrecy.

He believes that the progress of medicine depends to a great extent upon vivisection and he also believes that if the clergyman can be made co-partner with the physician in the care of the sick individuals and in the health of the community that they will be so thoroughly convinced of the absolute need of vivisection that they will be able to do much to prevent adverse legislation.

The book is worth reading by any physician. It is readable and is printed in splendid type and on light paper so that it is not burdensome to manage.

A TEXT-BOOK OF PHYSIOLOGY, for Medical Students and Physicians, by William H. Howell, Ph. D., M. D., Sc. D., LL. D., Emeritus Professor of Physiology in The Johns Hopkins University, Baltimore; Thirteenth Edition, Thoroughly Revised; 1150 pages with 308 illustrations; Philadelphia and London; W. B. Saunders Company; 1936; Cloth, \$7.00 net.

Howell's physiology was first issued in 1905 and ever since has occupied a prominent place among the several popular texts upon this subject. This edition just off the press has been thoroughly re-

vised to include the generally accepted facts brought out by the research of the last few years.

Howell's style of writing has always made his book easy to read and understand. Each edition probably is an improvement over the previous one.

An important feature in this book is that clinical work is recognized as being of value, along with laboratory research, in interpreting and understanding body phenomena.

This is a book that every physician should own and read—a little at a time, so as to be modern in the subject of fundamental physiology.

The book comes from Saunders — a sufficient recommendation as to type, cuts, paper, general appearance, etc.

APPLIED DIETETICS: Sanford Blum, A. B., M. S., M. D.; Head of Department of Pediatrics and Director of Research Laboratory, San Francisco Polyclinic and Post Graduate School; F. A. Davis Company, Philadelphia; 1936; Price \$4.75.

Dr. Blum has produced a very practical book on a much neglected subject. It might well be kept on the practitioner's desk for frequent reference. Disease conditions are arranged alphabetically with appropriate discussions as to dietary necessities. Specific diet lists are given for each condition. The dietaries are of proven value as they have been successfully and extensively used in the past 20 years.

There is a timely chapter entitled "Dietetic Fads and Fancies," the purpose of which is to safeguard the practicing physician from the errors of propagandists and misguided enthusiasts.

The book is a valuable and practical addition to every doctor's library.

Arthritis and Rheumatic Diseases

By MAURICE F. LAUTMAN, M. D.

Foreword by DR. MORRIS FISHBEIN

177 pages, 5½x8, \$2.00

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Dr. Morris Fishbein,

Editor, Journal of the American Medical Association

Chapter Headings

What Is Arthritis?
What Causes Arthritis?
The Symptoms of Arthritis.
The Rheumatoid Disorders.
Focal Infection.
The Relation of Diet to Arthritis.
The Mental Aspects of Arthritis.
The Arthritis Problem.
The Treatment of Arthritis.
Rest.
Diet.
Massage and Exercise.
Heat.
Hydrotherapy.
Vaccine Treatment.
The Care of the Intestinal Tract.
Climate and Arthritis.
Helpful Hints.
The Prevention of Arthritis.
The Arthritis Patient and the Physician.

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Epidemic Meningitis	1st Week	Until cultures negative
Measles	2nd Week	Until 5 days from onset rash
Mumps	3rd Week	Duration of Swelling
Poliomyelitis	3-10 Days	21 Days
Rubella	3rd Week	Duration of catarrh and rash
Scarlet Fever	1st Week	After 21st Day— until cultures negative
Whooping Cough	2nd Week	Until 4 weeks from onset whoop

*From
American Journal
of Public Health—
March, 1927*

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